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Environment Statistics Section
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FOCUS: Methodological and data collection advances to support climate change statistics

Official statistics are needed to support independent, transparent and timely information to monitor climate change and evaluate climate actions including mitigation and adaptation success. Lessons on data stewardship governance and data performance can help to strengthen the use of alternative sources of data to be accepted as official statistics.

Questions for surveys and censuses for collecting official statistics constitute an indispensable source of data to inform key aspects of climate change such as the way it affects individuals, households, business operators, government actions. This defines their perceptions and experiences which drive and define respective choices and behaviours, as illustrated by the detailed examples from the UK's Opinions and Lifestyle Surveys and Business Insights and Conditions Surveys and the Population Survey on Perceptions from Statistics Netherlands.

Climate change statistics is a relatively new and dynamic field of statistics and there are many data gaps, in particular in developing countries. Filling data gaps via relevant data collection instruments is one of the main objectives of implementing the Global Set. A relatively new source for environment and climate change statistics has been discussed at the tenth meeting of the Expert Group on Environment Statistics (EGES) and includes (i) developments in survey modules on climate change; and (ii) experience on climate change related data collections via Population and Housing Census (PHC). Beyond PHCs, specialised surveys which capture information concerning environmentally-related issues, such as on climate change and disasters, are regularly shared by Member States with UNSD, which are also featured in the centralized hub (see also article under UNSD news).

Taking into account that a number of indicators in the Global Set of Climate Change Statistics and Indicators require data from surveys and censuses, during the tenth meeting of the EGES which allowed for much consultation between Member States and UNSD, the formation of a sub-group of experts was proposed to facilitate a general collection of climate change questions and to develop a core set which can be included in these data collection instruments. This sub-group with about 14 experts met several times in the first half of 2024 and supplied multiple national examples with suitable questions to be nominated as core questions for climate change surveys. The core questions/topics will be reviewed at the next meeting of the EG-ECCS for approval (see also article under UNSD news).

UNSD continued collaboration with specialized agencies and relevant institutions on prioritized topics to advance the methodology and implementation support for the Global Set of Climate Change Statistics and Indicators in a balanced way, especially bearing in mind methodological advancements concerning tier 3 indicators. Taking into account the important methodological developments in the areas of **climate and health** led by ONS of the United Kingdom, and **climate and gender** led by the Inter-Agency and Expert Group on Gender Statistics and UN-Women in the Asia-Pacific region, UNSD has continued to review the methodological advances to incorporate the corresponding updates into the Global Set as appropriate. Other areas will also be prioritized on the basis of the availability of expertise and resources.

The above highlights were communicated to UNFCCC in a response to the call on the Global Goal on Adaptation (GGA) UAE-Belem Work programme on Indicators UAE Framework for Global Climate Resilience which asked for information on existing indicators for measuring progress towards the GGA as well as a compilation and mapping of existing indicators relevant to measuring progress towards these targets. UNSD submitted exemplary indicators, methodologies and applications mapped to the GGA targets in a non-exhaustive list - a selection of indictors from the Global Set and complementary advances in particular on gender and health statistics, as contributed by the ONS of the United Kingdom, and the UN-Women office in the Asia-Pacific region.

UNSD NEWS:

Outcomes of the Fifty-fifth Session of the UN Statistical Commission (New York, USA, 27 February – 1 March 2024)

From the perspective of the Environment Statistics Section of UNSD, several significant outcomes were achieved via this year's UN Statistical Commission. As foreshadowed with those in attendance at the Expert Group on Environment Statistics (EGES) in October 2023, the Statistical Commission approved the renaming of the EGES as the Expert Group on Environment and Climate Change Statistics (EG-ECCS) to cover both topics, given their close interrelationship. As may already be known to many readers, the EGES will henceforth continue as the EG-ECCS and is scheduled to meet in October 2024. Furthermore, the Statistical Commission requested that the work programme to which the Environment Statistics Section and its many stakeholders in UN member states contribute, combine environment and climate change statistics into a single joint report for the Statistical Commission.

The Statistical Commission further encouraged UN member states' application of the Global Set of Climate Change Statistics and Indicators, regional indicator sets such as the gender and environment indicators for the Asia-Pacific region, the set of core climate change-related indicators of the Conference of European Statisticians, and the self-assessment tool and implementation guidelines to assist in establishing national programmes on climate change statistics, which will contribute to the reporting under the Paris Agreement. In the name of continuing to strengthen the link between statistics and policy, and to avoid any duplication of effort, further collaboration between UNSD, the United Nations Framework Convention on Climate Change (UNFCCC) and other key partners was also encouraged.

Eight specific outcomes (listed as (a) to (h)) can be viewed in full as decision 55/118 pertaining to Climate Change Statistics in the Final Report on the fifty-fifth session of the Statistical Commission, available here.

On the margins of the Statistical Commission, while many UN member states have a delegation in New York, USA, the Environment Statistics Section typically takes advantage of the opportunity to promote key parts of its work toward an engaged audience. On 28 February 2024, a Side Event to the Statistical Commission was convened, entitled: Together for Transparency – strengthening collaboration on climate change statistics for reporting. At the Side Event, UNSD and partners demonstrated recent work toward strengthening collaboration on climate change statistics for reporting, bearing in mind agenda item 4(d) of the Statistical Commission on climate change statistics. The Side Event followed the adoption of the *Global Set of Climate Change Statistics and Indicators* by the Statistical Commission in 2022 as the framework to be used by countries when preparing their own sets of climate change statistics and indicators according to their individual concerns, priorities and resources. As of now, many countries have made significant forward steps in applying the Global Set and were able to showcase their efforts toward other countries in the audience.

UNSD presented on the Implementation of the *Global Set of Climate Change Statistics and Indicators*. Partners on the panel, all of whom are members of the Expert Group on Environment Statistics themselves or represent countries or institutions that are members, demonstrated how their work relates to climate change, the *Global Set of Climate Change Statistics and Indicators*, and to the value of strengthened collaboration for climate change reporting. UNFCCC, the United Republic of Tanzania, Finland, the Economic Commission for Latin America and the Caribbean (ECLAC) and UNEP gave presentations.

A further key message of the Side Event was the value of countries applying the *Global Set* collaboratively between national statistical offices and other key stakeholders, while bearing in mind the value such an effort will have in reporting climate change statistics for Enhanced Transparency Framework (ETF) purposes under the Paris Agreement. For further information, refer here.

UNSD/UNEP Data Collection

UNSD/UNEP Questionnaire 2024 on Environment Statistics (waste and water sections)

The UNSD/UNEP Questionnaire 2024 on Environment Statistics will be in its 12th round of UNSD's biennial environment statistics data collection mandated by the Statistical Commission. Since 2006, the Questionnaire has collected data purely on the themes of Waste and Water. Consequently, this has helped build an established time series. It will be sent to more than 160 countries and territories, excluding OECD and European Union members (for which comparable data are collected as part of the OECD/Eurostat Joint Questionnaire on the State of the Environment).

An announcement letter will be sent from UNSD to the heads of the National Statistical Offices and Ministries of Environment in the countries in August 2024 encouraging them to nominate a single national focal point for the 2024 Questionnaire. The pre-filled UNSD/UNEP Questionnaire 2024 on Environment Statistics will be sent out in September 2024. UNSD plans to provide online sessions to assist countries with the completion of the UNSD/UNEP Questionnaire. Following consultations with UNEP, for the first time in 2024, the UNSD/UNEP Questionnaire will collect data on food waste generation. This effort is taking place with a view of satisfying demand for SDG indicator 12.3.1(b): food waste index.

Data Collection and Dissemination on Environment Statistics

The UNSD/UNEP Questionnaire 2022 on Environment Statistics was sent out to more than 160 countries and territories in August 2022. Eighty-eight countries/territories responded, 26 countries more than for the 2020 questionnaire. Among the 88 countries submitting data, 52 countries provided data for both the water and waste sections of the questionnaire, while 34 countries provided data for only one of the two sections.

The updated Environmental Indicators, in the form of indicator and time series tables are published through the UNSD Environmental Indicators. Statistics on both Water and Waste are based on official statistics supplied by national statistical offices and/or ministries of environment (or equivalent institutions) in response to the biennial UNSD/UNEP Questionnaire on Environment Statistics, complemented with comparable statistics from OECD and Eurostat, and water resources data from FAO Aquastat. The complete data and footnotes received from each respondent country have been uploaded to the Country Files webpage. If you have any questions or comments, please send them to: envstats@un.org.

Advancements by the Intersecretariat Working Group on Water Statistics

Continuing close collaboration on water through regular teleconferences with international agencies (namely, Organisation for Economic Cooperation and Development (OECD), Eurostat, Food and Agriculture Organization of the United Nations (FAO), UN-Habitat and World Health Organization (WHO)) has led to a considerably greater usage of the data collected via the Questionnaire. Per demand from key stakeholders, the data collected from UN member states via the UNSD/UNEP Questionnaire on Environment Statistics is now being directly used in outputs worked upon by international stakeholders such as the SDG 6.3.1 (proportion of wastewater safely treated) Progress Report (drafted by WHO). Due to the pressing interest in wastewater statistics from WHO and UN-HABITAT, the UNSD/UNEP Questionnaire 2024 on Environment Statistics may link to a diagram describing stock and flow of wastewater.

Close collaboration has been required among the three international organisations who collectively cover all

UN member states in collecting data on water via international questionnaires (Eurostat, OECD and UNSD) as the OECD's Working Party on Environmental Information (WPEI) agreed to adjustments in definitions used in its Questionnaire on Inland Waters. Those adjustments will also be made to the relevant terms of the UNSD/UNEP Questionnaire on Environment Statistics (water section) which means harmonisation of terms is kept among the international questionnaires. The reason for the adjustments, which are so fine and minimal that no time series interruptions are anticipated, was to ensure multiple uses of UN member states' data can be made (e.g., for the System of Environmental-Economic Accounting (especially the Water Account)). UNSD will communicate all adjustments when sending its Questionnaire to approximately 160 UN member states in September this year.

Environment Statistics and Climate Change Statistics Surveys

UNSD has compiled over 100 specialized environment statistics and climate change surveys from countries which are available on the website (https://unstats.un.org/unsd/envstats/censuses/) and can be filtered by country, theme and year. Users can expect additional surveys collected from countries and which are expected to be uploaded soon online. Environmentally- or climate change-related questions in censuses are also available. Languages in which surveys or censuses are available include Arabic, English, French, Portuguese and Spanish. Interest in including environment and climate related questions in censuses and surveys has increased and this was discussed extensively at the tenth meeting of the Expert Group on Environment Statistics and also features in the Report of the Secretary General on Climate Change Statistics (E/CN.3/2024/20) to the 55th session of the Statistical Commission in 2024 (https://unstats.un.org/UNSDWebsite/statcom/55). The Commission, as noted in in its final report (Report E/2024/24-E/CN.3/2024/36) [decision 55/118], inter alia, encouraged national statistical systems to invest in the development of climate change statistics by enhancing the use of administrative data, designing specialized surveys or other data collection tools, and including climate- and environment-related questions in relevant censuses and sample surveys, as appropriate (https://unstats.un.org/UNSDWebsite/statcom/documents/55)

Sub-Group on Climate Change Questions for Surveys and Censuses

Based on a recommendation from the Expert Group on Environment Statistics (EGES), a Sub-group was established to develop a core set of climate change questions which can be included in censuses and surveys for countries. With representatives from various parts of the world, the group comprises experts from both countries such as Cabo Verde, Italy, Mexico, Nepal, Suriname, United Republic of Tanzania and Uganda and international agencies such as ECLAC, SPC, UNFCCC and UN-Women.

The aim is to compile a repository of existing questions, propose new ones where feasible and formulate a core set to be applied in censuses and surveys on national level.
The questions, largely from Population and Housing Censuses, and also other sources such as agricultural censuses and specialized surveys, are being considered for their applicability to serve as inputs for data collection by countries on the Global Set of Climate Change Statistics and Indicators. This follows the Statistical Commission adoption of the Global Set in March 2022, and discussion at the Expert Group on Environment Statistics (EGES) in October 2023 which recommended formation of this sub-group.

Integration of a Gender perspective in Climate Change Statistics

UNSD following up on the implementation of a previous mandate from the Statistical Commission, in which the Commission requested that a gender perspective be adopted and integrated into all its agenda items (E/2020/24-E/CN.3/2020/37, decision 51/115), has been advancing the work in climate change statistics. UNSD has consulted with UN-Women and the Inter-Agency and Expert Group on Gender Statistics to identify where cross-fertilization and synergies between climate change and gender statistics can aid Member States in the advancement of both statistical fields (see E/CN.3/2024/14). The aim is to provide an opportunity for Member States to create efficiencies in their programmes of work concerning climate change and gender statistics, taking into consideration the nexus between the two and acknowledging that both are naturally very cross-cutting.

During the tenth meeting of the EGES, experts' focus included how gender statistics could be a powerful tool to address different environmental challenges and also enhance climate change or disaster risk reduction governance. At the meeting, a representative of the Inter-Agency and Expert Group on Gender Statistics introduced initiatives regarding the integration of a gender perspective into the field of environment and climate change statistics. The first agreed-upon activity by the Inter-Agency and Expert Group involved creating a guidance note highlighting the relevance of gender statistics in understanding environmental challenges for women and men and improving actions related to climate change and disaster risk. latest advancements on the nexus between climate change and gender statistics. In this regard the Environment Section and the Social and Gender Statistics Section, UNSD have been working on a template to collect country experiences on mainstreaming gender in climate change statistics. The template was shared with members of the EG-ECCS (formerly EGES) and 17 countries have sent their feedback while others are expected. Monitoring of responses will continue as the results are expected to be discussed at the eleventh meeting of the EG-ECCS.

This work also features in the Report of the Secretary General on Climate Change Statistics (E/CN.3/2024/20) to the 55th session of the Statistical Commission in 2024 (https://unstats.un.org/UNSDWebsite/statcom/55). The Commission, as noted in in its final report (Report E/2024/24-E/CN.3/2024/36) [decision 55/118], inter alia, took note of the work undertaken to develop methodologies for prioritized topics, and encouraged the further integration of gender, health, disasters and other statistical areas into environment and climate change statistics (https://unstats.un.org/UNSDWebsite/statcom/documents/55).

Environment Statistics and Climate Change Statistics Reports

Many countries are continuing to compile environment statistics compendia and similar publications which apply the FDES 2013 which UNSD makes available on its website at https://unstats.un.org/unsd/envstats/fdescompendia.cshtml so far in Arabic, English, French, Portuguese and Spanish. More recently, countries (and agencies) have started producing separate climate change statistics publications for which UNSD has established a dedicated website at: https://unstats.un.org/unsd/envstats/climatechange_reports.cshtml.

UNSD continues to welcome contributions of both country compendia that apply the FDES 2013, other environment statistics compendia and specialized reports such as on climate change statistics, as well as surveys or censuses on environment statistics or climate change statistics. They can be shared with the Environment Statistics Section (contact: envstats@un.org) where they may then be made available on UNSD's website.

Caribbean SIDS-SIDS peer-learning workshop on Data solutions for nature (Belize City, Belize, 30 April – 2 May)

UNDESA (UNSD and the Small Islands Developing States (SIDS)- Unit of Division for Sustainable Development Goals -DSDG), in partnership with the UN Economic Commission for Latin America, and the Caribbean (UNECLAC), the UN Resident Coordinator for Belize and the CARICOM Secretariat, organized a three-day workshop for the Caribbean SIDS. Hosted by the Government of Belize in Belize City, the regional workshop was implemented under the project "*Fostering Caribbean SIDS-SIDS Peer-Learning and Cooperation on Data Solutions for Nature to accelerate the implementation of the 2030 Sustainable Development Goals and the achievement of the Global Biodiversity Framework*", funded by Spain, European Union and the Republic of South Korea. The project is in direct response to the SIDS Coalition for Nature's Call for Action made at Biodiversity COP15 in 2022.

The workshop was the first milestone of this project and brought together representatives of both ministries of environment and national statistical offices from 14 of the Caribbean SIDS. The capacity development workshop focused on environmental data management mechanisms illustrated by best practices by SIDS in the region, some of which reflect unique applications of international statistical frameworks and tools, especially the Framework for the Development of Environment Statistics (FDES) and its Environment Statistics Self-Assessment Tool (ESSAT). During the first two days, participants shared best practices on environmental statistics related to i) data governance, ii) data production and iii) data reporting and dissemination. To help foster more SIDS-SIDS exchange, the countries all shared areas where they'd a) be happy to have others learn from them and b) would like to learn from other countries. This will be followed up on in the second phase of the project. On the third day focus was on the Multilateral Environmental Agreements (MEAS) and how the countries can improve reporting in this area.

Exploring Practice and Policy for Waste Management and Resource Circularity (Madagascar, 15 May 2024, Hybrid)

The United Nations Office for Sustainable Development (UNOSD) together with the Korea Environment Corporation (K-eco) and the Global Green Growth Institute (GGGI) undertook a scoping mission to Madagascar on 15 May 2024. This one-day technical workshop on waste management and resource circularity explored the policy and practice of waste management within a life cycle approach. The participants included key stakeholders in the field of waste management (policy and technical) from national and local government, academia, research institutions etc. and this workshop was used to highlight the importance of data reporting.

UNSD was invited to present (virtually) on the Waste section of the UNSD/UNEP Questionnaire on Environment Statistics. When presenting on the context of waste statistics collected via the UNSD/UNEP Questionnaire on Environment Statistics for over 20 years, the UNSD colleague emphasised sources used,

especially whereby a national statistical office maintains inter-institutional relations at varying levels of government. Methodologies specified in the Framework for the Development of Environment Statistics (FDES) were cited, as were existing work the section does whereby waste statistics feed into policy frameworks such as the Sustainable Development Goals and the Global Set of Climate Change Statistics and Indicators. Madagascar has also published an environment compendium based on the FDES and in which data were sourced from the UNSD/UNEP Questionnaire on Environment Statistics. A question-and-answer session was held after UNSD's presentation. Several questions were submitted demonstrating interest in completing the UNSD/UNEP questionnaire on waste statistics.

UNSD's participation at the IAOS-ISI 2024 Conference on "Improving Decision-Making for All" (Mexico City, 15-17 May 2024)

The 19th Conference of the International Association for Official Statistics (IAOS) and the 4th Regional Conference of the International Statistical Institute (ISI) were held in Mexico City from 15 to 17 May 2024 and were organized by the National Institute of Statistics and Geography (INEGI). The conference brought together attendees from over 65 countries to discuss the vital role of official statistics as a public good and its foundational importance for informed decision-making.

One of the sessions entitled The Challenges Of Statistical Production For Climate Change brought together panellists from INEGI, ECLAC, UNSD, UN Women, and the Ministry of Environment and Natural Resources of Mexico to present on their respective activities and projects to contribute to the development of statistics and indicators on climate change and disasters. UNSD described how, in collaboration with the United Nations Framework Convention on Climate Change (UNFCCC) and the Expert Group on Environment Statistics (EGES), it developed the Global Set of Climate Change Statistics and Indicators that was adopted by the fifty-third session of the Statistical Commission in March 2022 as the framework for climate change statistics and indicators to be used by countries when preparing their own sets of climate change statistics and indicators according to their individual concerns, priorities and resources. The Global Set establishes the synergy between the Paris Agreement and other international agreements, primarily the Sendai Framework and the 2030 Agenda for Sustainable Development, and the indicators sets under these agreements are well aligned. Gender explicit impacts of climate change have been recognized of particular importance and work to integrate gender and climate change statistics has been initiated at UNSD.

UNSD's contribution at the Regional Training on the Production and Use of Waste and Circular Economy Statistics and Indicators (Vienna, Austria and virtual, 20-21 June 2024)

As part of a long-standing close collaboration with the United Nations Economic Commission for Europe (UNECE), the Environment Statistics Section of UNSD presented at this regional training workshop organized by UNECE and the United Nations Industrial Development Organization (UNIDO). The issue of circular economy and its consideration of treatment methods of municipal solid waste, hazardous waste, e-waste, etc. is of great relevance to UNSD since it houses the world's best-known database on waste statistics (exclusive of OECD and European Union member states) which have been collected from over 160 UN member states over a 25-year period via the UNSD/UNEP Questionnaire on Environment Statistics. UNSD's participation was a chance to demonstrate its keen interest in ensuring that the statistics it compiles feed into policy concerning circular economy, and promote developments, for instance, in member states moving away from landfilling all waste, and rather toward recycling, composting or otherwise sustainable methods of treating waste. While presenting, UNSD stressed the many uses in addition to circular economy of the waste statistics it collects, such as the Sustainable Development Goals, the Global Set of Climate Change Statistics and Indicators, the Framework for the Development of Environment Statistics, SEEA Waste Accounts, etc. and stressed the value of country-owned data (as opposed to estimations) made available via the UNSD/UNEP Questionnaire. Questions from the floor revealed keen interest in measuring e-waste, understanding the value of legislation to ensure appropriate treatment of e-waste, as well as a desire to understand best methods for measuring composition of municipal solid waste. For further information kindly click here:

Regional Training on the production and use of waste and circular economy statistics and indicators | UNECE

UNSD participation at the High-Level Political Forum (HLPF) Side Event: Partnerships for Addressing the Waste Crisis and Accelerating Circularity: A New Policy Support Initiative for Data and Action (New York, 12 July 2024)

Following recent capacity development work in collaboration with the UN Office for Sustainable Development (UNOSD) within DESA's Division for Sustainable Development Goals, UNSD again collaborated with UNOSD to serve as a panelist at this High-Level Political Forum Side Event. UNSD spoke on the value of waste statistics to inform policy decisions concerning circular economy, and for consideration of treatment methods of municipal solid waste, hazardous waste, e-waste, etc. which is of great relevance to UNSD since it houses the world's best-known database on waste statistics (exclusive of OECD and European Union member states) which have been collected from over 160 UN member states over a 25-year period via the UNSD/UNEP Questionnaire on Environment Statistics. Toward a high level and in many cases ministerial audience, UNSD stressed the value of UN member states ensuring a close collaboration between National Statistical Offices and other key stakeholders at federal, state and municipal level. Other key messages stressed were the value of statistics on waste in serving as an evidence base for informing, checking and improving policy concerning circular economy, which were in close alignment with those messages expressed by member state Ministers and distinguished delegates from the Republic of Korea, Madagascar, Bangladesh and Mexico. Moreover, the side event also launched the DESA publication, "The Waste Crisis: Partnerships for Addressing the Waste Crisis and Accelerating Circularity - A New Policy Support Initiative for Data and Action" which repeatedly cites the decades-long work of UNSD on waste statistics, and which UNSD reviewed and contributed comments. UNSD continues its close, mutual collaboration with UNOSD which stresses the value of country-owned waste statistics for informing decisions on circular economy analysis (see also contribution from UNOSD under International News below).

Measuring what we waste - Closing the gaps on waste data

(Contributed by Chun Kyoo Park, Sara Castro Hallgren, and Emily Carroll, United Nations Office for Sustainable Development (UNOSD), Division of Sustainable Development Goals, DESA)

Waste is an indicator of the efficiency of our economic systems. The best available data shows that waste, as a residual output from our consumption and production patterns, has been increasing and is set to grow considerably by 2050:

- Humanity generates an estimated 2.3 billion tons of municipal solid waste (MSW) annually and waste generation could rise by more than 77% by the end of 2050.[1]
- Only 62% of MSW is managed in controlled facilities across the world.[2]
- Approximately, 90% of waste in low-income countries is discarded in unregulated dumps or burned openly.[3]
- The waste sector contributes an estimated 20% of human-caused methane emissions.[4]

Globally, countries face many barriers to tackling the waste crisis, with developing countries encountering the greatest challenges due to limited financial and technical resources, weak governance, and inadequate infrastructure. Data and knowledge gaps represent key challenges to the effective implementation of policy actions for more resource circularity, as a strong evidence base is fundamental for informed decision making.

Recognizing this global challenge, the 2030 Agenda, with its 17 Sustainable Development Goals (SDGs), included indicators directly relating to sustainable waste management. These indicators directly contribute to three goals (Table 1) however, sustainable waste management is indirectly related to all 17 SDGs. These indicators are internationally recognized and provide countries and institutions with a clear methodology for data collection to better our progress on tackling a growing waste crisis.

SDG indicators with direct focus on waste:

- 11.6.1: Municipal Solid Waste Management
- 12.3.1: Food Loss and Waste
- 12.4.1: Information Transmitted under Chemicals and Waste Conventions
- 12.4.2: Hazardous Waste Generated and Treated
- 12.5.1: National Recycling Rate
- 14.1.1: Coastal Eutrophication and Plastic Debris Density

Nearly a decade after the adoption of the 2030 Agenda, UN Member States have made great progress on measuring, monitoring and reporting on the SDG targets. However, 2030 is now less than six years away, and waste data remains significantly underreported. SDG 11, which entails most of the performance indicators for solid waste management (SWM), has the most insufficient data available for progress assessment among the 17 SDGs (UN, 2023). Equally, SDG target 12.5 measured by data on national recycling rates and tonnes of material recycled, has amassed little to no data for most developing countries.

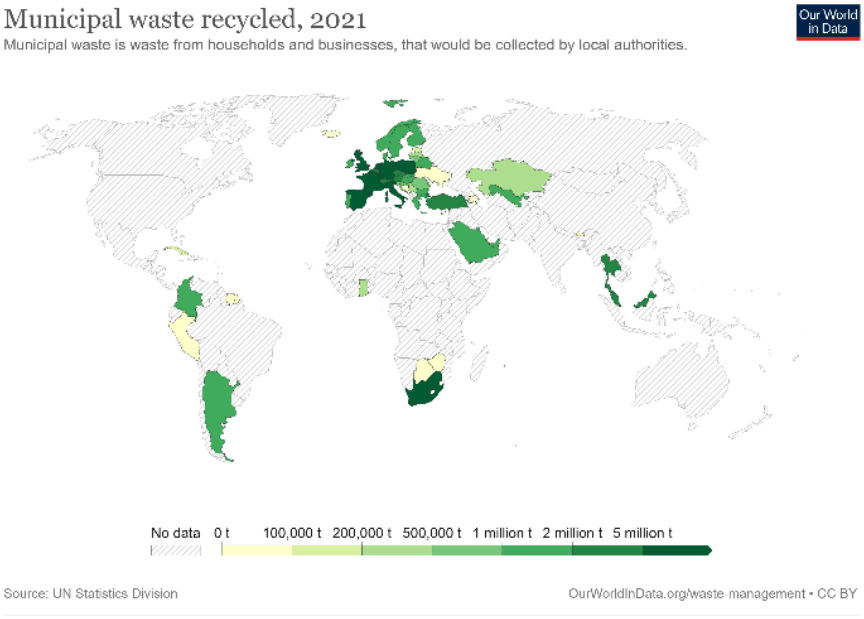
[1] United Nations Environment Programme (2024). Global Waste Management Outlook 2024: Beyond an age of waste – Turning rubbish into a resource. Nairobi. https://wedocs.unep.org/20.500.11822/44939

[2] Ibid.

[3] World Bank, 2019. Accessed 15 April 2024 at: https://www.worldbank.org/en/topic/urbandevelopment/brief/solid-waste-management

[4] https://www.nasa.gov/missions/emit/nasa-sensors-to-help-detect-methane-emitted-by-landfills/

Figure 1. Municipal waste recycled, SDG 12.5.1



When it comes to 12.5.1, which tracks the national recycling rate including municipal (household) waste and electronic waste, very limited data is available across regions (Figure 1).

As most of the municipal waste data is collected by local authorities, the scarcity of reporting suggests a lack of capacity to overcome data gaps at local level. It also shows that there is a need for national to local data coordination to strengthen monitoring and reporting at country level on, for example, national recycling rates.

In addition, data gaps exist, even in countries with high reporting rates, as the current SDG indicators do not measure the quantity and types of waste materials recovered. This data is essential to compare global to national progress on shifting to a circular, less resource intensive economy.

Recognizing the importance of comprehensive data, the United Nations Statistics Division (UNSD) has systematically surveyed countries on waste since 1999, with the 11th round of data collection on waste and water conducted through the UNSD/UNEP Questionnaire 2022 on Environment Statistics. Data outputs are publicly available in the form of environmental indicators or by reporting country and year.[5] The Questionnaire also provides waste generation, collection, and recycling data by type of waste (hazardous, municipal solids, and, as a result of a collaboration with UNITAR, e-waste[6]).

However, a simple analysis shows that reporting rates and data recency are also correlated to a country's income.[7] The average number of reported items in high-income countries is nearly double (6.2) that of the average reported from low-income countries (3.5), showing a clear correlation between a country's income and data reporting on solid waste. Lower-income countries clearly require support for coordinated data collection efforts and harmonized reporting on national to local waste related data.

Many developing countries also rely on informal recycling and resource recovery initiatives, accounting for

[5] UNSD/UNEP Country Files: https://unstats.un.org/unsd/envstats/country_files

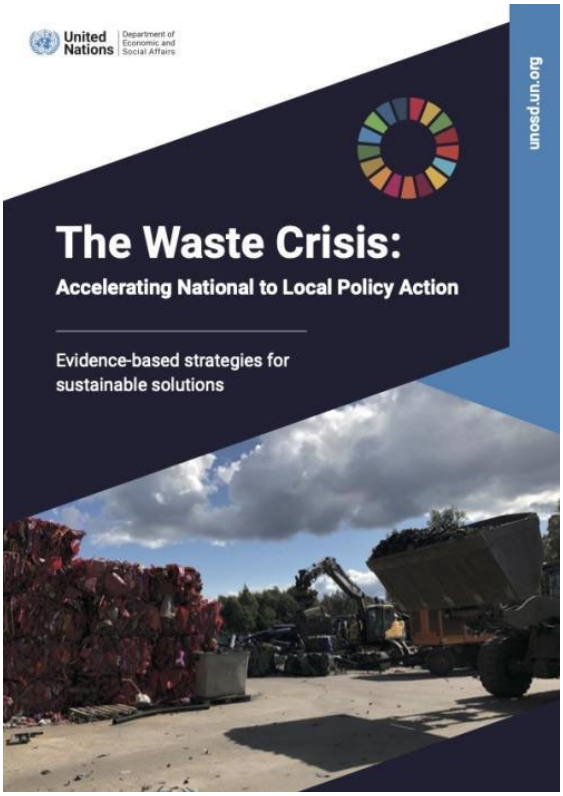
[6] UNITAR's global and regional e-waste monitors: https://ewastemonitor.info/

[7] UNSD, Country Files from the UNSD/UNEP data collection on environment statistics (available at: https://unstats.un.org/unsd/envstats/country_files).

further data gaps. While the informal economy is advancing resource circularity and zero-waste, people within the sector are often in extremely vulnerable situations, particularly women and children.[8] The sector's critical role needs to be fully acknowledged by establishing and securing the legal frameworks and policies necessary to improve the working conditions and standards of living for those within the sector. However, limited data on the positive or negative externalities of the sector, restricts the reach and impact of policy. Closing these data gaps in developing countries is a key priority for the 2030 Agenda to ensure the principles of Leaving No One Behind can be fully achieved.

A recent Expert Group Meeting led by UNOSD under UN DESA's Division for SDGs with stakeholders from Member Country governments, civil society and international organizations, highlighted why waste related data is underreported in the SDGs.[9] In addition to the capacity gaps mentioned, issues raised related to the need for harmonization of terminology and increased coordination across the ministries responsible for waste data. It was also noted that while many developing countries do encounter similar challenges with relation to data collection and reporting, data and policy tools need to fully reflect the specific country context in order to encapsulate a comprehensive view of the country situation.

The information from this event has been used to better shape a new global policy support initiative on the topic. The initiative is designed to complement the data collection activities of the UNSD/UNEP Questionnaire on Environment Statistics and to identify and address existing gaps, thereby strengthening data reporting and supporting evidence-based policymaking for the waste crisis. The initiative was launched, together with the publication *The Waste Crisis: Accelerating National to Local Policy Action - Evidence-based strategies for sustainable solutions*, at a High-level Political Forum side-event on 12 July this year. The event included keynote speeches from H.E. Mr Max Andonirina Fontaine, Minister of Environment and Sustainable Development, Madagascar, and H.E. Mr Saber Chowdhury, Minister of Environment, Bangladesh. The Ministers highlighted the urgency of addressing waste management issues, the fundamental need for data to develop and implement appropriate policies, and the necessity to build the capacity of governments to interpret available data. To address these critical needs, and to improve the overall effectiveness of waste management strategies, the global policy support initiative will work closely with regional hub countries and convene regional meetings to strengthen member state capacity up until 2030.



[8] Kristanto GA, Kemala D, Nandhita PA. Challenges confronting waste pickers in Indonesia: An on-field analysis. Waste Management & Research. 2022;40(9):1381-1389. doi:10.1177/0734242X211029181

[9] Expert Group Meeting on Policies for Resource Circularity and Solid Waste Management to Accelerate National to Local Progress on the Sustainable Development Goals, November 2023: https://unosd.un.org/events/2023EGM-Resource-Circularity-and-Solid-Waste-Management

Sharing lessons from implementation of GCF impacts measurement framework

(Contributed by Aiko Ward, Data Management Specialist, Johann Elysee, Data, Results Management and Knowledge Lead, and Hansol Park, Climate Policy and Governance Specialist a.i, Green Climate Fund)

For the Green Climate Fund (GCF), the attainment of climate impacts from its investments is the essence of its mandate. Through the operationalization of robust yet practical climate impact measurement methodologies for GCF investments, we ensure that reported results are credible. To this end, the integrated results management framework (IRMF) – a GCF policy adopted by the Board, is one of the Fund's key tools to enable rigorous climate impact measurement of our investments. The IRMF has been under implementation since July 2022 and so far, 62 projects/programmes amounting to USD 3.8 billion in approved funding are applying the framework.

As the GCF is a learning institution, sharing experiences from the IRMF including lessons and challenges is as equally important as capturing results in a credible manner. During GCF's participation in a mandated UNFCCC workshop under the UAE-Belem work programme on indicators, we took the opportunity to share experiences from the IRMF to contribute to the discussion on indicators for the UAE Framework for Global Climate Resilience.

The workshop was the first occasion where country representatives and subject matter experts came together under the work programme to discuss a range of topic areas in relation to indicators for the UAE Framework for Global Climate Resilience. It is anticipated that the indicators once developed under the Framework will help track global progress on key sectoral adaptation targets.

Building on this participation, the GCF Secretariat will continue to support the stakeholders on this matter via various avenues going forward, including meetings of the UNFCCC and COP engagements.

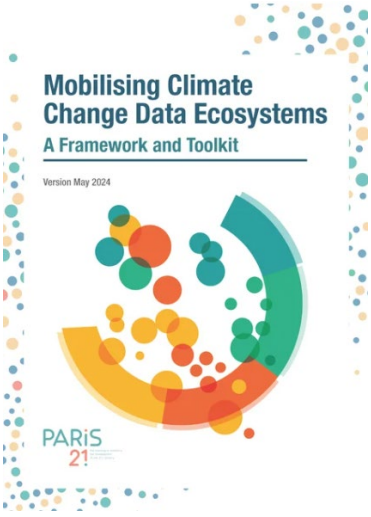
News from PARIS21

PARIS21 Launched the Mobilising Climate Change Data Ecosystems Framework

(Contributed by Paz Patiño, Yuqiao Kang, Karina Cázarez, PARIS21)

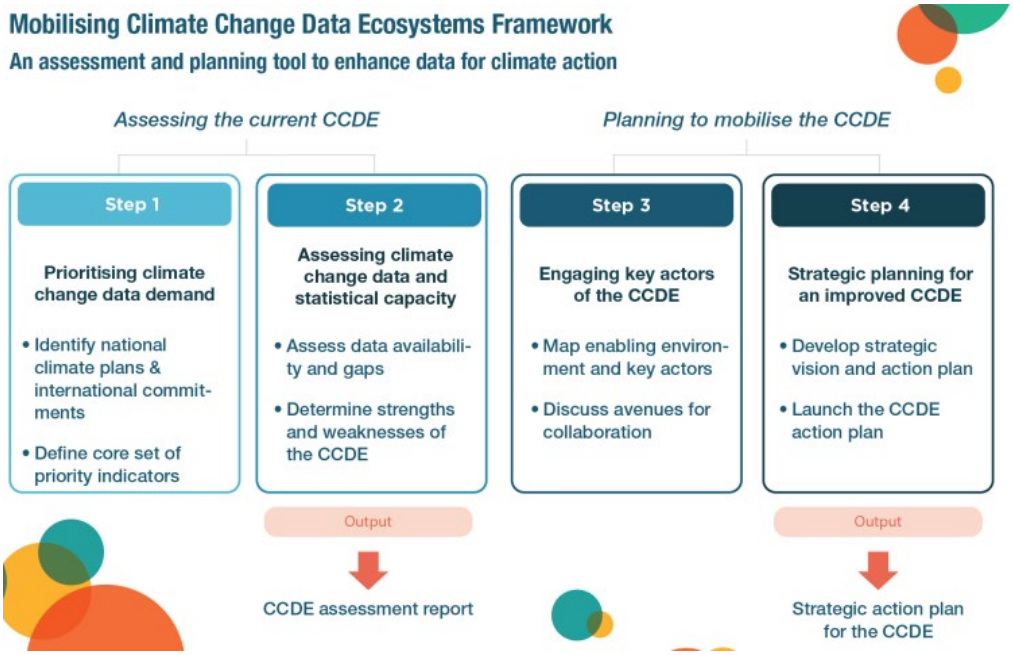
Climate change affects every country in the world, but how and to what extent countries are affected differs greatly. Persistent data gaps, resource and capacity constraints, lack of appropriate legal and regulatory frameworks, and ineffective co-ordination between and across relevant stakeholders are limiting the use of data for climate action.

To help countries overcome these challenges, the Partnership in Statistics for the 21st Century (PARIS21) launched the **"Mobilising Climate Change Data Ecosystems"** Framework in May 2024. This framework offers a practical step-by-step guide and tools for countries to develop comprehensive climate change data strategy according to their development priorities. The Framework and tools and are available in English and French.



Grounded in extensive fieldwork conducted in Senegal, Belize, Grenada, and Lao PDR, the Framework reflects PARIS21's commitment to enhancing strategic approaches to climate data. Drawing on over two decades of experience in developing and implementing National Strategies for the Development of Statistics (NSDS), this initiative underscores the importance of a strategic, informed approach to climate data, ultimately supporting more effective climate action.

Targeted at national and international stakeholders involved in climate change data, the framework guides users through a four-step process:



The framework also provides a set of tools to assist with each of these steps, making it easier for stakeholders to implement the recommendations.

For more information and to access this Framework, visit PARIS21's website.

Strategic planning for climate change statistics in Botswana, Kenya and Malawi

PARIS21 is partnering with the statistics offices and ministries of environment of Botswana, Kenya and Malawi to improve strategic planning for statistics, through the implementation of the PARIS21 climate change data ecosystems (CCDE) framework.

Pictures: Workshop National Strategy for the Development of Statistics in Malawi (above) and Botswana (below)

These three countries are developing new strategies for statistics that will now include a specific action plan for climate change data. The inclusion of climate change will ensure better and more timely information on climate challenges, reinforcing the importance of data-driven approaches to climate action.

PARIS21 and key institutions in partner countries met to discuss priorities for data and statistics aligned to national development plans, current capacity for statistics and key areas for improvement in the next 5 years.

Empowering Kenyan institutions to use Big Data for SDG monitoring

PARIS21 in collaboration with the Kenya National Bureau of Statistics (KNBS) and the International Centre for Big Data for Sustainable Development (CBAS), hosted workshop on the use of big data to monitor Sustainable Development Goals (SDGs) related to the environment and climate change. This initiative aims to harness satellite images to update data in areas where current information is outdated and enhance the capacity of key Kenyan institutions on the use of big data for statistics. This technical workshop was targeted at GIS experts and statisticians. PARIS21 and CBAS experts will continue to work with KNBS to close SDG data gaps.

Picture: Workshop on big data for climate change-related SDGs in Kenya

Upcoming Regional Workshop on Strengthening Climate Change Data Ecosystems in Senegal

From July 16-18th, PARIS21 and National Agency for Statistics and Demography of Senegal (ANSD), in collaboration with Open Data Watch, the Center for Open Data Enterprise, and with support from Hewlett Foundation, are organizing a Regional Workshop "Strengthening Climate Change Data Ecosystems: Senegal and the region". During the event, Senegal will launch the climate change data action plan of their fourth National Strategy for the Development of Statistics (NSDS IV). It will also be an opportunity for invited countries to share good practices around climate change data and highlight successful collaborations between statistics offices and ministries of environment.

Global E-waste Statistics Guidelines

(Contributed Oliver Lysaght and Kees Baldé, UNITAR-SCYCLE Programme)

The Sustainable Cycles (SCYCLE) programme has emerged as a global leader in developing approaches to measure e-waste starting at the United Nations University and the programme is now hosted by the United Nations Institute for Training and Research (UNITAR) since 2022. SCYCLE continues its mission to promote sustainable societies through training and capacity-building activities, as well as key outputs including the Global E-Waste Monitor, Regional E-Waste Monitors and E-Waste Statistics Guidelines.

The objective of the E-Waste Statistics Guidelines ('the guidelines') is to support National Statistical Offices (NSOs), other government agencies and interested parties in constructing harmonized and robust statistics on e-waste. To achieve this, the first and second editions of the guidelines (published in 2015 and 2018, respectively), covered key aspects of producing comparable and high-quality statistics on e-waste including the UNU-KEYS classification, a measurement framework and potential data sources and reporting indicators. The methods set out in the guidelines help measure the scale of consumption of electronic products, e-waste generated, transboundary e-waste movement and e-waste recycling performance. The guidelines have proven impactful to date, feeding into EU legislation and production of statistics across governments outside of the EU as well as having inputted to UN Sustainable Development Goal (SDG) reporting.

Reflecting a range of methodological developments since the last release, the third edition of the E-waste Statistics Guidelines is currently being drafted in conjunction with key statistical groups. This is with the aim of publishing in 2025. This edition follows the same principles of the previously endorsed guidelines, while providing updates in several key areas. These updates include: revisions to the UNU-KEYs classification; an outline of recent and planned changes in linked statistical classifications; newly developed approaches to measure areas such as transboundary e-waste flows and legislation; updated example survey questions for households and businesses; and refreshed technical parameters – including average weights and lifespans of Electrical and Electronic Equipment (EEE) in various parts of the world mapped to the UNU-KEYS, alongside correlations to trade classifications and data on material compositions. To help bring the

methodology to life, the release will also provide updated examples from countries undertaking measurement of e-waste flows, many of which are based on UNITAR SCYCLE tools.

The work on the third edition is being performed in collaboration with UNEP and financed by UNEP's European Commission funded project on *Enhancing countries' capacities for measuring progress on the transition towards a circular economy*. The third edition of the E-Waste Statistics Guidelines will be consulted on publicly from October 2024. More information on how to input to the public consultation will be announced via the UNITAR SCYCLE news page in early October: https://www.scycle.info/news-media/. Related resources can be found at the global e-waste statistics partnership website www.globalewaste.org and UNITAR SCYCLE website: www.scycle.info

UNEP News

Measuring Progress Special Edition Report on Disaggregation

(Contributed by Sophia Leticia Groll and Therese El Gemayel, UNEP)

UNEP is finalizing the report Measuring Progress Special Edition: Disaggregation, which is expected to be launched in the second half of 2024. It is part of the Measuring Progress series, previously published by UNEP in 2019, 2021 and 2023.

The report series aims to inform on the environmental dimension of sustainable development, analyze the progress made in achieving the Sustainable Development Goals (SDG) targets, identify data gaps and better understand interlinkages between the environmental, social and economic dimensions.

This Special Edition focuses on proposing thematic disaggregation for the 92 environment-related SDG indicators and discusses their relevance for targeted, evidence-based policymaking at national and/or subnational levels. In addition, potential impacts of proposed policies on societies, the economy and the environment are presented.

UNEP Initiated Project on Capacity Building for Circular Economy

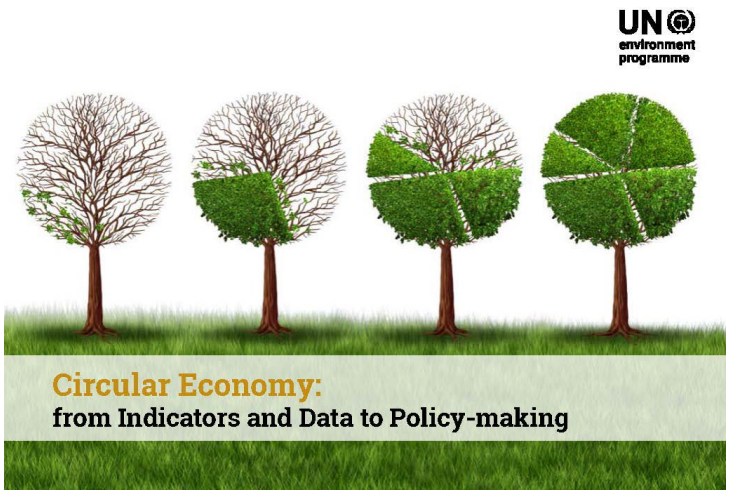
(Contributed by Sophia Leticia Groll and Therese El Gemayel, UNEP)

UNEP commenced the implementation of the European Commission (EC)-funded project on Enhancing countries' capacities for measuring progress on the transition towards a circular economy (2024-2026).

The project aims to accelerate the transition towards a circular economy in the context of sustainable development by focusing on three areas: (i) development or enhancing methodologies at the global level, (ii) regional capacity building and dialogue between data users and producers, and (iii) enhancing national statistical capacities. It also encourages knowledge sharing within countries to ensure sustainability. The objective is to inform evidence-based policies by regularly producing circular economy and waste datasets.

Report on Circular Economy: From Indicators and Data to Policy-Making
(Contributed by Sophia Leticia Groll and Therese El Gemayel, UNEP)

In February 2024, UNEP launched the report titled Circular Economy: from Indicators and Data to Policy-making.



The report aims to map data on core Circular Economy Indicators at national, regional, and global levels, based on the Guidelines for measuring circular economy. This analysis aims to assess the availability and accessibility of circular economy indicators. The report also evaluates the importance of core indicators in targeted policy-making to advance the transition towards a circular economy. Additionally, country-specific examples of achievements in selected countries are presented as well as instances of how circular economy indicators could be utilized in monitoring targeted policies.

Regional Activities on Circular Economy Indicators Planned For 2024
(Contributed by Sophia Leticia Groll and Therese El Gemayel, UNEP)

UNEP will implement regional activities in the second half of 2024 under the European Commission (EC)-funded project on Enhancing countries' capacities for measuring progress on the transition towards a circular economy (2024-2026).

The project focuses on various SDG indicators concerning Sustainable Consumption and Production (8.4.1/12.2.1, 8.4.2/12.2.2), food waste and loss (12.3.1a and 12.3.1b), waste (11.6.1, 12.4.2a, 12.4.2b and 12.5.1) and water (6.4.2). Regional capacity building workshops are planned for Africa, Asia and the Pacific and Latin America and the Caribbean, to enhance the dialogue between data users and producers. The workshops will focus on advancing the use of circular economy indicators in policymaking and supporting the participation among national SDG 12 indicators focal points to the Networks of government experts.

Global Consultation on the Statistical guideline on measuring flows of plastic along the life cycle
(Contributed by Ekaterina Poleshchuk (UNEP), Zhijie Li (UNITAR), Cornelis Peter Balde (UNITAR))

In July 2024, UNEP and UNITAR will hold a Global Consultation on the Statistical guideline on measuring flows of plastic along the life cycle. The Global Consultation will cover all UN Member States and other relevant partners.

Work on developing the statistical guideline on plastic began in 2023 by UNEP and UNITAR with aim to support countries in calculating indicators on plastics alone the life cycle. UNEP and UNITAR work in collaboration with UNCTAD, UNSD, ECE, OECD, BRS Secretariat, Statistics Norway, University of Wollongong (Australia), and many others.

By June 2024, UNEP and UNITAR had already carried out several rounds of consultations, starting with a narrow group of statisticians outside both organisations, then with the Community of Practice on the Harmonization of Models and Methodologies on Plastics, of which UNEP is the secretariat, and the System of Environmental-Economic Accounting Central Framework Technical Committee, of which UNSD is the secretariat.

The final statistical guideline on plastic is planned to be published in the first half of 2025. Use of the statistical guideline on plastic by statisticians and other relevant experts will lead to the production of high-quality statistics on plastics that are comparable at the national, regional and global level and, as a results, will inform policies on various strategically important topics including the 2030 Agenda for Sustainable Development, the Circular Economy, national source inventory on plastics and waste management.

Environment Statistics in South Sudan
(Contributed by Dany Ghafari, UNEP)

UNEP has been supporting the Government of South Sudan to strengthen the national capacity on reporting on the Rio Conventions and improve public access to environmental information within the framework of the African Ministerial Conference on the Environment (AMCEN) initiative on implementation of Africa Environment Information Network (AEIN) initiative. UNEP Regional Office (ROA) leveraged GEF funding to support South Sudan establish a National Environmental Information Network (NEIN) composed of all core producers of environmental data. The NEIN is chaired by the National Statistics Bureau (NBS), with a secretariat hosted by the Ministry of Environment and Forestry (MoEF). ROA extended its support to South Sudan to establish Shared Environment Information System to facilitate data flows between and among core data producers and users. With the technical support of the Centre for Environment and Development for the Arab Region and Europe (CEDARE), UNEP implementing partner, the NEIN compiled 178 core set of environmental indicators that now underpin the design of a national Environmental Information System (EIS portal) aimed at facilitating the collection, management, sharing and reporting of environmental data. To further improve the environmental statistical system in South Sudan, the NBS in collaboration with NEIN and UNEP is organizing an environmental data management training from 16th to 19th July 2024, aiming at introducing the Framework for Development of Environment Statistics (FDES) to the NEIN and refining the current indicator framework in the country by applying the ESSAT.

Environment Statistics in Indonesia
(Contributed by Dany Ghafari, UNEP)

UNEP is assisting Indonesia in determining the country's scope of environment statistics and data, provided by various national stakeholders, to process the development of environment statistics in line with the Sustainable Development Goals (SDGs) and Multilateral Environment Agreements (MEAs). The BPS - Statistics Indonesia has identified the needs based on a series of meetings with different ministries and other relevant organizations in the country held between September and October 2023. During the meetings, representatives of different ministries and relevant institutions gave positive responses to the Framework for the Development of Environment Statistics (FDES 2013) mapping, carried out by BPS-Statistics Indonesia, and identified their readiness to collaborate and coordinate the preparation of Indonesian Environment One Data starting from mapping indicators based on FDES 2013, filling in the Environment Statistics Self-Assessment Tool (ESSAT) metadata, fulfilling Indonesian One Data (SDI) principles among others. UNEP in close collaboration with BPS - Statistics Indonesia is organizing a Capacity building exercise on the Framework for the Development of Environment Statistics (FDES 2013) from the 12th to the 15th of August 2024 to enhance the capacity of relevant experts in Indonesia to collect and disseminate environment statistics in accordance with international statistical standards. The workshop will also cover in addition to BPS - Statistics Indonesia, participations from the Ministry of Environment and Forestry, the Ministry of Maritime Affairs and Fisheries, the Ministry of Agriculture, the Ministry of Energy and Mineral Resources, Meteorology, the Climatology and Geophysics Agency, the National Disaster Management Agency, Coordinating Ministry for Maritime and Investment Affairs, and other relevant agencies, under necessity.

GEMS and Early Warning for the Environment (GEMS-EWE) - Leveraging Innovative Approaches to Close Data-Action gaps in environmental monitoring

(Contributed by Dr. Richard Munang, Head, Global Environment Monitoring Systems and Early Warning for the Environment, UNEP)

Environmental monitoring and early warning are not new. However, one critical limitation that continues to linger is that the translation of early warnings into early action to address environmental risks continues to lag the progress being registered in closing data gaps in monitoring the state of the environment. For example, if we consider air pollution, it is recorded that there is a record number of cities – up to 6000 cities in 117 countries – that monitor the state of air quality. However, this data does not translate to improved air quality, and as a result, over 90% of the global population still breathes air that exceeds WHO air quality limits. In water quality, continuously collected data on progress on SDG Indicator 6.3.2 – *"proportion of bodies of water with good ambient water quality"* - records that improvement in data on the state of water quality is not translating to improved water quality. This state of affairs implies that the progress being made in monitoring the state of the environment, which is at the midstream, will not, by itself, lead to an improved state of the environment – be it air quality, water quality, ocean/coastal health, etc.

The Global Environment Monitoring Systems (GEMS) and Early Warning for the Environment (EWE) have prioritised addressing this critical gap with an innovative intervention that leverages the expansive data already being made available on the state of the environment at the midstream as an "early warning" of the risk sources and causes at the upstream, that need to be forestalled and minimised to then achieve tangible improvement on the state of the environment. Simply, the data on the midstream state of the environment is matched to potential risk sources and causes at the upstream. The potential interventions/solutions needed to forestall and minimise these upstream risk sources. These forestalling actions/solutions are analysed for the investment enablers required to drive their widescale uptake, which is then used to inform investment planning and policy incentives to catalyse enhanced uptake of these solutions.

For example, in air quality, the open-source data on the midstream state of air quality is being leveraged as an "early warning" to inform forestalling attributable sources and causes upstream. However, for forestalling to occur, there is a need to locate these attributable potential upstream sources and causes. This has not been there, and for this to happen, we have innovated an approach where we have started getting the radius of coverage of the sensors already monitoring the state of air quality at the midstream. From the literature, we have learned that most low-cost sensors, like those used by open-source actors, have a coverage of 500m to about 5km at the highest. This then means that once a sensor is located, we define an area of about 500m to 5km radius and scout for potential polluting activities that match the pollutants being measured by sensors. These can be determined from literature reviews and published works. For example, if we get high levels of $PM_{2.5}$, PM_{10}, methane, etc., we can conclude from the literature that this may indicate waste dumpsites and waste burning upstream. To further refine these potential upstream causes, satellite imagery from available sources, such as Google Earth, NASA, etc., is also used to focus on the defined radius to establish potential upstream pollution sources and causes within the area. To further confirm these upstream sources, community engagement/citizen scientists are deployed to verify these upstream sources. As informed by local surveys and literature reviews, these established upstream sources are matched to potential actions/solutions that can forestall them.

For example, biodigesters that intercept waste to prevent it from ending up in open dumps where it concentrates to emit methane as well as burn to release particulate matter, etc. These solutions are matched to the necessary social (e.g. skills retooling/development), financial (e.g., affordable credit), market (e.g., product development), and policy (e.g., tax breaks) enablers needed to enhance the uptake of these forestalling actions so they can inform investment and policy planning to catalyse further uptake.

This example is demonstrated in Cameroon, where there are 4 IQAir sensors – 3 in Douala and 1 in Yaoundé - reporting primarily on **PM2.5** concentration in Yaoundé, which is currently 4.6 times the WHO annual air quality guideline value. This is likely due to waste burning, amongst other aspects that contribute to this.

Given that this is a common problem in African countries and cities/towns, we are leveraging this to engage the community in the vicinity of these sensors. One of the communities has been engaged, trained, and convened into a cooperative that is deployed to monitor the likely upstream risk sources and causes of these emissions. They are scouting their surroundings for community waste dumping sites that are regularly burned and are, therefore, a source of particulate matter pollution. They are guided to form WhatsApp groups in which they post and share any photos and details of such upstream risk sources and causes, from where the communities dumping waste are engaged to instead bring their waste to a shared community biodigester that intercepts the waste and prevents it from ending up in the open waste dump and burned. Cumulatively, the combination of physical sensor locations and ground citizen scientists is helping to inform upstream risk sources and causes of $PM_{2.5}$ impacting the state of air quality. Additional partnerships are being mobilised to expand this approach, which will also be applied to air quality in other locations and to the other domains of water, ocean, and coastal health.

FAO News

FAO Launches a new data domain on Bioenergy

(Contributed by Francesco Nicola Tubiello, Alessandro Flammini and Kevin Karl, FAO and Leonardo Souza, UNSD)

The Food and Agriculture Organization of the United Nations (FAO) has created a new FAOSTAT domain on bioenergy. The new statistics expand FAO's provision of global data on agrifood systems. The FAOSTAT Bioenergy domain was launched on 18 June 2024, during the 11th edition of The Global Bioenergy Partnership (GBEP) Bioenergy Week.

The new statistics provide information on the production and final consumption of bioenergy by type of biofuel: solid biofuels (animal waste, bagasse, black liquor, charcoal, fuelwood, other vegetal material and residues); liquid biofuels (bio jet kerosene, biodiesel, biogasoline, other liquid biofuels), and gaseous biofuels (biogas). The conversion from physical units to energy is performed by FAO according to the International Recommendations for Energy Statistics (IRES) and the United Nations Statistics Division (UNSD) guidelines. Statistics are available from 1990 to 2022 by country, covering 193 countries and 22 territories, with regional and global aggregates.

The bioenergy domain is the result of a collaboration between FAO Statistics Division (ESS), FAO Office of Climate and Biodiversity (OCB) and UNSD.

Trends in bioenergy production and use are discussed in:

FAO. 2024. Bioenergy, 1990–2022. FAOSTAT Analytical Briefs Series No. 87. Rome. https://doi.org/10.4060/cd1027en

FAO uses new proxy to report on SDG 2.4.1

(Contributed by Francesco Nicola Tubiello, Nidal Ramadan, Nathan Wanner, Arbab Asfandiyar Khan, Stefania Bacci, Xueyao Pan, FAO)

Monitoring progress on SDG 2.4.1, the indicator measuring the "Proportion of agricultural land under productive and sustainable agriculture'' has been a challenge for most countries. This is due to the complex nature of data requirements and the need to have a robust farm-survey system in place for regular data collection on 11 themes across 3 dimensions of sustainability.

In order to assist countries in monitoring the sustainability of their agricultural systems, FAO, in collaboration with a group of countries and under the guidance of the IAEG-SDG, developed an SDG 2.4.1 proxy. The proxy is based on seven sub-indicators that can be easily computed from available national statistics, or from data already provided by countries to FAO and published in FAOSTAT.

Using the SDG 2.4.1 proxy, FAO has recently provided to UNSD the first ever global and regional storyline on productive and sustainable agriculture. FAO also used the proxy to expand SDG 2.4.1 data coverage to most countries over the 2015-2021 period, with data and metadata made available by UNSD on 28 Jun 2024. FAO also disseminates the underlying sub-indicator data via a dedicated FAO SDG 2.4.1 proxy data page.

FAO is available through its regular capacity development activities i.e. technical assistance and training on SDG 2.4.1 to provide support to countries on the use of the proxy as an interim solution for reporting on the indicator.

Update on recent progress on the monitoring framework for the Kunming-Montreal Global Biodiversity Framework

(Jillian Campbell, Kieran Mooney and Lisa Janishevski, Convention on Biological Diversity)

Recognizing the importance of monitoring for halting and reversing the loss of biodiversity, in 2022, the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) adopted a monitoring framework along with the Kunming-Montreal Global Biodiversity Framework. The monitoring framework includes headline and binary (qualitative, question based) indicators which are part of the core reporting by countries to the Convention and a set of optional component and complementary indicators. The COP also established an Ad Hoc Technical Expert Group on Indicators (AHTEG) to advise on the further operationalization of the monitoring framework (see decision 15/5) (as mentioned in the previous issue of the ENVSTATS newsletter).

To facilitate uptake and foster discussion on the guidance of the AHTEG, the Secretariat organized a series of 17 webinars between April and June of 2024. The webinars provided general overview as well as in-depth discussion on topics including the relationship between the monitoring framework and the System of Environmental-Economic Accounting, the Global Ecosystem Typology, traditional knowledge indicators, as well as indicators and monitoring specific topics in the Global Biodiversity Framework, including measuring protected areas, biodiversity finance, invasive alien species, genetic diversity, access and benefit sharing and many other topics. The webinars also discussed what the monitoring framework can measure, related gaps, research needs, capacity needs, and opportunities for national monitoring. The guidance of the AHTEG was also shared at a workshop held on 11 May 2024 in Nairobi.

Readers are encouraged to familiarize themselves with the guidance on the monitoring framework. This guidance has been prepared to assist countries in formulating national targets to respond to the Kunming-Montreal Global Biodiversity Framework. These national targets can be submitted as part of a country's national biodiversity strategy and action plan or as a stand-alone submission. The guidance is also relevant to the preparation of the seventh and eighth national reports to the Convention which are due by 28 February 2026 and 30 June 2029, respectively. The guidance is available in these two documents: *Guidance on needs related to implementing the monitoring framework of the Kunming-Montreal Global Biodiversity Framework* (CBD/SBSTTA/26/INF/19) and *Guidance on using the indicators of the monitoring framework of the Kunming-Montreal Global Biodiversity Framework* (CBD/SBSTTA/26/INF/14). Among the topics covered in these documents cover are:

- metadata for each headline and binary indicator in the monitoring framework for the Kunming-Montreal Global Biodiversity Framework;

- recommendations on disaggregations of the indicators, including through alignment of national ecosystem data with the Global Ecosystem Typology level 2 and 3, and for reporting on geospatial indicators disaggregated by ecosystem functional group;
- guidance related to using other indicators in the framework;
- identification of and mechanisms for filling gaps; and
- identification of research and capacity needs.

Both documents are currently being revised to take into account comments received as part of a recently completed peer review process carried out in response to a request from the 26th meeting of the Subsidiary Body on Scientific Technical and Technological Advice (SBSTTA) (for further details see CBD/SBSTTA/26/L.10) and will be further discussed at the sixteenth meeting of the CBD COP (COP-16).

Overall, there has been important progress recently on the monitoring framework for the Kunming-Montreal Global Biodiversity Framework and this will be a key agenda item for the consideration of the COP-16 which is to be held in Cali, Colombia from 21 October to 1 November 2024.

Global update on safely treated wastewater (SDG Indicator 6.3.1)

(Contributed by Florian Thevenon and Graham Alabaster, UN-Habitat, Andrew Shantz and Richard Johnston, World Health Organization)

The objective of monitoring progress against Sustainable Development Goal (SDG) indicator 6.3.1 ("the proportion of domestic and industrial wastewater flows safely treated") is to ensure accountability among United Nations (UN) Member States towards reducing water pollution, minimizing release of hazardous chemicals, and increasing safe wastewater treatment and reuse to improve sustainable water management, while providing necessary and timely information to decision makers and stakeholders to make informed decisions. With this purpose, SDG indicator 6.3.1 tracks the proportion of wastewater flows generated by domestic and industrial economic activities that are safely treated. Wastewater is considered to be safely treated if it is discharged in compliance with relevant standards or treated to a level commensurate with secondary (or higher) processes.

The United Nations Human Settlements Programme (UN-Habitat), the World Health Organization (WHO), and the United Nations Statistics Division (UNSD) are the three UN custodian agencies responsible for monitoring SDG indicator 6.3.1. This indicator has been disaggregated into three components, namely the safely treated proportions of total, industrial, and domestic wastewater flows. Distinct methodologies are however employed for the total and industrial components which are monitored by UN-Habitat, and for the domestic component which is monitored by WHO. In August 2024, the third global progress report on SDG 6.3.1 will be published, updating the statistics presented in the last global progress report from 2021[10]. The UNSD/UNEP Questionnaire on Environment Statistics that compiles data from UN member states on wastewater statistics represents the single largest source of data for the report, providing information for 42 countries. UN-Habitat directly collected data from 34 countries, while the Eurostat and OECD Joint Questionnaire on Inland Waters provided data for 31 countries. WHO compiled additional national data sources relevant for domestic wastewater, including reports from statistical offices, line ministries, and regulatory authorities.

According to the new report, the proportion of total wastewater receiving some level of treatment in 2022 (76%) could only be calculated for 73 countries (representing 42% of the global population); whereas the proportion of total wastewater "safely" (i.e. at least secondary treatment) treated (60%) could only be

[10] https://www.unwater.org/publications/progress-wastewater-treatment-2021-update

calculated for 42 countries (representing 12% of the population). These data are insufficient to establish globally representative statistics on the proportion of total wastewater treated and safely treated. This increase in data coverage has resulted in an updated aggregate estimate of the proportion of total wastewater treated: the 2021 report found that just 32% of total wastewater was treated in 2015. This change does however not reflect a significant increase in the flows treated, but rather an increase in data collection. In contrast, it is still extremely challenging to readily assess industrial wastewater flows, with 49 countries reporting some statistics on flows generated, and only 27 countries reporting some statistics on flows treated.

Globally, 58% of household wastewater was estimated to have been collected, delivered to treatment, and safely treated and discharged in 2022. While the proportion of household wastewater safely treated in 2022 is slightly higher than that previously reported for 2020 (56%), trends on the indicator remain inconclusive until estimates are made over a longer time period. Additionally, the lack of data for a 2015 baseline estimate inhibits the assessment of progress towards target 6.3, which calls for halving the proportion of untreated discharges by 2030. Regional estimates were produced and published for all eight SDG regions, as well as other regional groupings (e.g. Least Developed Countries). Broad disparities were found in the proportion of household wastewater safely treated across the SDG regions. Country files describing the data and estimates for domestic wastewater are available from the WHO website.[11]

A dedicated section of the report presents the cross-cutting benefits of wastewater reuse and climate change adaptation and mitigation as well as implications for wastewater treatment on health.

REGIONAL NEWS

OECD News

(Contributed by Ivan Haščič, Sarah Miet, Miguel Cárdenas Rodríguez and Rodrigo Pizarro, OECD Environment Directorate)

OECD work on information, indicators and reporting related to environment and sustainable development is steered by the OECD **Working Party on Environmental Information** (WPEI) that also provides a forum for helping countries improve their environmental information systems. The WPEI brings together delegates from OECD member, accession and partner countries (environment ministries and agencies, statistical offices), and international organisations, and is chaired by Arturo de la Fuente (European Commission). The aim is to provide core sets of objective and reliable data and indicators on the environment and sustainable development to support international and national policy work, to advance the development of accounts and integrated databases, and to support the development and use of new information and monitoring tools. The 2024 meeting was held on 26-27 March 2024.

Harmonised environmental data and indicators for international work

Environment at a Glance platform

The OECD "Environment at a glance" platform provides real-time interactive online access to OECD indicators on the environment building on the OECD Core Set of Environmental Indicators – a tool to monitor environmental performance in countries and to track the course towards sustainable development.

[11] https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health/monitoring-and-evidence/wash-monitoring/2023-country-files-for-sdg-6.3.1

Users can download and share data, graphics, and thematic webbooks with key messages on major environmental trends in areas such as climate change, biodiversity, water resources, air quality, circular economy, and ocean resources. The Environment at a glance platform has been updated, alongside the related country profiles, with improved graphics and text.

Main databases

During late 2023 and early 2024, all OECD environmental and green growth datasets data have been migrated to the new data portal, OECD Data Explorer. The environment-related data have been restructured and reclassified according to a new taxonomy (sub-themes). Several new datasets have been added, such as air emissions from maritime transport and the Climate Actions and Policies Measurement Framework (CAPMF).

The OECD Policy Instruments for the Environment (PINE) database was updated and expanded to 136 countries (two new countries in 2023 and four in 2024). The domain tagging methodology for the list of 22 environmental domains in the database has been published in 2024. Environmentally related tax revenue statistics were updated in April 2024 and are available for more than 120 countries (1994-2022), disaggregated into four tax base categories (energy, transport, pollution, and resources) and tagged in the 22 environmental domains they address (air pollution, biodiversity, climate change mitigation, ocean sustainability, etc.). The full 2024 update of the PINE database will be published in the PINE dissemination platform in July 2024.

Environmental data collection

Environmental data have been collected since 1980 from OECD members, accession and partner countries via the OECD questionnaire on the *State of the Environment* and compiled from other international sources and from Earth observation. The data collection via questionnaire is closely coordinated with the UNSD/UNEP *Questionnaire on Environment Statistics* and done jointly with Eurostat for common European Union member countries. This ensures a global country coverage for waste and water. The next collection will take place in early October 2024.

New OECD publications

In November 2023, the OECD published an updated indicator methodology on the *Environmentally Adjusted Multifactor Productivity: Accounting for renewable natural resources and ecosystem services*. Multifactor productivity is a comprehensive measure of productivity where the underlying production function accounts for multiple factor inputs, traditionally labour and produced capital. While single-factor productivity is intuitively simple, such measure offers a biased picture of the economy because it attributes all variation in output growth to a single factor input (e.g. consumption of fossil fuels or material resources) while the role of other factors is ignored. Multifactor productivity aims at addressing this shortcoming, and as such it is a valuable component of the OECD set of Green Growth headline indicators.

In March 2024, the OECD published the *GHG Emission Trends and Targets (GETT): Harmonised quantification methodology and indicators*. At the centre of the Paris Agreement are Nationally Determined Contributions (NDCs) that establish countries' plans to mitigate greenhouse gas (GHG) emissions. However, mitigation contributions defined in NDCs are different across countries in terms of target types, coverage of sectors and gases. This makes it challenging to assess progress on mitigation commitments. To complement the UNFCCC efforts, and facilitate the evaluation and monitoring of targets, this paper, published in March 2024, develops a methodology that harmonises countries' 2030 mitigation targets in physical units and provides clarity on sector and gas coverage. The results are used to develop the GHG Emission Trends and Targets (GETT) indicators for non-EU countries and the EU-27 covered under the International Programme for Action on Climate (IPAC).

In June 2024, the OECD published the *Greenhouse gas emissions data: Concepts and data availability*. Greenhouse gas (GHG) emissions data is essential for tracking progress towards the Paris Agreement's global temperature goals. In addition to the emissions inventories based on the Intergovernmental Panel on

Climate Change (IPCC) guidelines there are other GHG emissions datasets that cater to different users and policy objectives. This paper explores the conceptual difference across approaches and presents and evaluates available OECD GHG emission datasets. Exploring issues of coverage and the data gaps. Finally, the paper outlines several steps to enhance data coverage and quality of the datasets as part of a programme of work to develop a comprehensive and integrated GHG emission dataset.

Implementing the SEEA and producing environmental-economic accounts

New Methodological Guidelines for Environmentally Related Tax Revenue Accounts

In October 2023, the OECD released its *Methodological Guidelines for Environmentally Related Tax Revenue Accounts*. The guidelines are in line with the System of Environmental Economic Accounting and ensure consistency with national and international data sources and manuals. The OECD guidelines are based on those of Eurostat with refinements and additional memo items. First, revenue from greenhouse gas emission taxes is split into two sub-categories: an energy-related part (recorded as an energy tax) and a non-energy-related part (recorded as a pollution tax). Second, four "memo items" are introduced to enhance the relevance of the accounts for policy work: (i) certain land taxes, (ii) taxes on oil and natural gas extraction, (iii) taxes on the resource rent and (iv) elevated VAT levied on environmentally related tax bases. The practical application of these guidelines was successfully pilot tested in 2018-19, and the guidelines were implemented in the 2019 and 2021 rounds of data collection from OECD member and partner countries. The results show that it is feasible to compile the accounts, including the refinements and the additions outlined in this document, across OECD and beyond.

Ongoing developments

To support environment-economy policy integration, the OECD is actively engaged in the work of the UN Committee of Experts on Environmental-Economic Accounting (UNCEEA) and works with Eurostat, the FAO, UNEP and UNSD to establish global SEEA related databases (energy, air emissions, material flows, land cover, water). Together with UNECE, it organises seminars on the implementation of the SEEA. The seventh OECD-UNECE seminar was held virtually in March 2024. Recent efforts focus on utilising SEEA for measuring circular economy, and on informing climate change adaptation and response policies with SEEA.

The OECD has also initiated an exploratory study on water accounts, with the objective of assessing the feasibility of establishing a global database, in collaboration with UN agencies. In parallel, the joint OECD/Eurostat inland waters questionnaire on the state of the environment is being amended to better align with the SEEA-CF and will be used in the forthcoming 2024 data collection.

The OECD, together with FAO and EEA, is also working towards establishing a global database on land cover accounts. A questionnaire is being finalised and will be pilot tested in Autumn 2024. OECD will collect data for its member countries and FAO will collect data for the rest of the world. A progress report on both accounts will be presented at the forthcoming meeting of the UNCEEA in June 2024.

CARICOM's Capacity Building Activities in Environment Statistics

(Contributed by Faustina Wiggins, Caribbean Community Secretariat (CARICOM))

The Caribbean Community Secretariat (CARICOM) continues to work on the production of its fifth regional Environment Statistics Report- 2020/2021, which is scheduled to be released in the fourth quarter of 2024. The publication will follow the series of capacity-building activities that have been undertaken in the Region in the form of in-country technical assistance activities with the support of the European Union (EU) under the Eleventh European Development Fund (EDF). The 11th EDF intervention in statistics aims to build on the gains of the 10th EDF interventions with a special focus on the need for monitoring implementation of

the 2030 Agenda for Sustainable Development, the SIDS Accelerated Modalities of Action (SAMOA) Pathway among other others. As it relates to Environment and climate change statistics, the overall objective of these activities is to strengthen capacity in the production of statistics in this area and to support the strengthening of inter-agency coordination within the National Statistical System (NSS).

In-country technical assistance activities, in the form of workshops, have been held in Saint Lucia and The Bahamas in February and March 2024, respectively and the final in-country technical assistance activity under the 11th EDF project was just concluded in Dominica in July 2024. The objectives include to exchange experiences about the statistical production processes and to improve the capacity of the National Statistical Offices to fill data gaps using the United Nations Framework for the Development of Environment Statistics (FDES 2013) and the Environment Statistics Self-Assessment Tool (ESSAT). Stakeholders in all participating countries were led in the completion of their ESSATs at these forums. It is anticipated that the participating countries will produce updated Environment Statistics compendia as an outcome of this intervention.

The 2023/24 work programme in Environment Statistics in CARICOM includes activities to continue to strengthen capacity in Member States through the Centre of Excellence (CoE) to assist countries to fill the data gaps and to enable the production of environment compendia with support from the Eleventh EDF in the first instance. The General Bureau of Statistics of Suriname, who was identified as a Centre of Excellence (CoE) in Environment and Climate Change Statistics, collaborated with the CARICOM Secretariat in conducting the aforementioned technical assistance activities in the region. The idea on developing Centres of Excellence came out of the work of the CARICOM Advisory Group Statistics. The key objective of the Centre of Excellences mechanism is the provision of technical assistance/capacity building through identification of the strengths, competencies and best practices possessed by respective Member States in specific areas of statistics that can then be used as a platform for undertaking attachments/exchange visits by those in need of obtaining requisite capabilities in these areas.

In other events, the Regional Statistics Programme of the CARICOM Secretariat was pleased to attend and participate in the Caribbean SIDS-SIDS Peer-Learning Workshop on Data Solutions for Nature and Capacity Building Workshop on Building Panel Data for Effective Monitoring of Multilateral Environmental Agreements (MEAs) in CARICOM, in Belize City, Belize from 30 April to 2 May 2024. The workshops were delivered in partnership with the Government of Belize (co-lead of the SIDS Coalition for Nature) and the United Nations Department of Economic and Social Affairs (UNDESA) to accelerate the implementation of the 2030 Agenda and the achievement of the Kunming-Montreal Global Biodiversity Framework. This workshop complements the work done under the CARICOM Environment Statistics Programme to improve data compilation and dissemination as well as to provide capacity-building support to member countries. Hence, the attendance of representatives from both ministries of environment and National Statistical Offices (NSOs) from the Caribbean which allowed for the identification, support and seizing of specific SIDS-SIDS knowledge transfer opportunities as thematic areas such as environmental data compilation, data production, and data dissemination/reporting, including reporting against MEAs were discussed. Notably, there were numerous requests from Member States for support in the area of IT systems to manage data, a capacity demonstrated by Belize. Belize indicated their willingness to provide support and invited the interested countries to submit formal requests to the Statistical Institute of Belize.

There are still many significant challenges in the compilation of Environment and Climate Change Statistics despite the efforts of the CARICOM Secretariat, the UNSD, International Development partners and countries. Some challenges are linked to the lack of resources, training and frequency of production of some indicators such as information on the housing stock, populations and households, which for many countries are collected every ten years in the Population and Housing Census. However, the results of Population and Housing Census 2020 for a number of countries are expected this year and it is anticipated that the results will reduce some data gaps, which exist. Additionally, the CoE mechanism is expected to aid capacity

building and training efforts optimising scarce resources and benefiting all countries. Furthermore, the Fourth High Level Advocacy Forum on Statistics will be held in the second half of 2024 as part of the activities for the Year in Statistics. The Forum, inter alia, encourages Member States and the CARICOM Secretariat to allocate the necessary human resource capacity at the national and regional levels. The Caribbean Community Secretariat therefore continues to encourage stakeholders to support the development of Environment and Climate Change Statistics in the region to make statistics available for monitoring and policy making which would aid in to lessening the challenges associated with the adverse effects of climate change, loss of biodiversity, drought, land degradation, waste management and other threats to the environment.

ECLAC Activities in Latin America and the Caribbean

(Contributed by the Statistics Division, Economic Commission for Latin America and the Caribbean)

Together for Transparency – strengthening collaboration on climate change statistics for reporting. Side Event at the 55th Session of the Statistical Commission. 28 February 2024. UN Headquarters.

ECLAC participated in the Side Event as part of the panel, presenting its own experience of "Contributing to Building Transparency and Accountability at the Regional Level". ECLAC highlighted the importance of these concepts across the production of environment and climate change statistics. Notably, the Development Account (DA) 12 project results were shared, which identified the transparency characteristics in the process and highlighted the significant advances in the region in this matter.

For further information kindly click here:
https://unstats.un.org/UNSDWebsite/events-details/un55sc-28032024-Together-for-transparency-climate-policy/

Regional Public Goods project: Environmental and climate change indicators: a common approach using innovative methods and alternative data sources. Side Event at the 55th Session of the Statistical Commission. 1st March 2024. UN Headquarters.

In this Side Event, ECLAC was responsible for showing the regional state of the art on environmental and climate change indicators. Our presentation included a comprehensive review of the international frameworks available for the production of environment and climate change statistics and indicators. We also provided a summary of the Statistics Division of ECLAC's work and main results in the region, including some of the products, platforms, and information available for the countries. The presentation showed some ideas for a regional framework on climate change and disaster indicators thinking on the ECLAC role and the Member States, including some general recommendations and main challenges.

Third meeting of the Conference of the Parties (COP) to the Escazú Agreement. 22-24 April 2024. Santiago, Chile.

The Environment, Climate Change, and Disaster Statistics Unit, on behalf of the Statistics Division, attends the COP to identify the needs of the countries and the opportunities to collaborate under this agenda. One of the main products for the countries, according to the Escazú Agreement, is the integration of the National Environmental Information System, and one of the most important components of this system would be the produced national environment statistics.

For further information kindly click here:
https://acuerdodeescazu.cepal.org/cop3/en

Caribbean SIDS-SIDS peer-learning workshop on data solutions for nature – from data governance and production to data reporting and dissemination. 30 April – 2 May 2024. Belize City, Belize.

It was a workshop as a part of the project developed to foster Caribbean SIDS-SIDS peer-learning and cooperation on Data Solutions for Nature to accelerate the implementation of the 2030 Agenda and the achievement of the Kunming-Montreal Global Biodiversity Framework. The project was designed to harness this potential with a focus on 'data solutions for nature' in the Caribbean region to help SIDS produce better and more timely data to inform policies in an integrated manner and monitor progress towards achieving the SDG. Also, the project approach is based on the very 'nature' of SIDS' unique characteristics. This project is led by Belize (as Caribbean co-lead of the SIDS Coalition for Nature) with the technical support of UNDESA (UNSD, DSDG), Caribbean Community (CARICOM) Secretariat as the Caribbean Hub – Capacity Building Related to Multilateral Environmental Agreements in African, Caribbean and Pacific (ACP) Countries Project, and the financial contribution of Spain -as a Friend of the Coalition- and the UNDESA Office for Sustainable Development (UNOSD). Partnerships with ECLAC and other UN Agencies, including RCOs are being sought. The main objectives were to promote peer-learning of best practices, lessons learned on data solutions in the Caribbean region, the identification of a roadmap for SIDS-SIDS cooperation on data solutions for nature, and guidelines for its implementation.

The challenges of statistical production for climate change. IAOS-ISI 2024 Conference. 16 May 2024, Mexico City. México.

This session was focused on sharing the challenges of statistical production for climate change and the ECLAC participation was setting the regional scene, including the regional and statistical challenges. One important part of this presentation was to disseminate the international statistical frameworks available for climate change production. Also, we included the ECLAC capacity buildings in this matter in addition to the regional indicators, tools, documents, and platforms available for the countries for climate change production, and some recommendations and main challenges to face better climate statistics.

For further information kindly click here:
https://www.isi-next.org/proposals/proposal/592/detail/

Informing climate change policies for the Caribbean and Latin America using AI and data innovation. 8th International Conference on Big Data and Data Science for Official Statistics. 11 June 2024. Bilbao, Spain.

This session showcased several multi-year projects: two in the Caribbean and one in Latin America. The purpose of these projects is ultimately to improve the formulation of evidence-based national and regional policies for climate change and trade. The projects should enhance the statistical and analytical capacities of selected Caribbean and Latin American states in utilizing data science and AI in combination with novel and national sources for the timely monitoring of maritime transport, tourism, trade, fisheries, and ecosystem services related to the coastal areas and the analysis of their CO_2 emissions, as well as the associated environmental-economic accounts. The ECLAC participation was setting the regional scene, including the regional and statistical challenges. One important part of this presentation was to disseminate the international statistical frameworks available for the production of climate change statistics. Also, we included the ECLAC capacity buildings in this matter in addition to the regional indicators, tools, documents, and platforms available for the countries for climate change production, the review of VNR LAC presented, the Statistical Conference of the Americas (SCA) working groups integrated, and some recommendations and main challenges to face better climate statistics.

For further information kindly click here:
https://unstats.un.org/bigdata/events/2024/conference/agenda/day2-sessions/climate-change-lac/

Webinar on climate change statistics and indicators in Latin America and the Caribbean. ECLAC. 18 June 2024.

Droughts and floods affect food security and the economy in the region. Environmental statistics in Latin America and the Caribbean require inter-institutional collaboration. While crucial for the 2030 Agenda, they are insufficient. This seminar seeks to improve the resilience of statistical systems with innovative data and modern technologies, reviewing advances and challenges in climate change statistics. This webinar was coordinated by the Environment Statistics, Climate Change and Disasters Unit of ECLAC's Statistics Division for our member states in the region and is part of the activities of workstream 2.1 "Statistics related to climate change and disasters" of the project "Resilient and agile national statistical systems to respond to post-COVID-19 data needs to recover better", under tranche 14 of the United Nations Development Account. The main objectives were to increase the resilience and agility of national statistical systems (NSS) to respond to new economic, social, and environmental data needs in times of crisis and disaster using innovative data sources, advanced data acquisition methods, and modern technologies while ensuring a pathway toward achieving the 2030 Agenda for Sustainable Development, with the review of state of the art, progress, and challenges of environment statistics, indicators, and accounts, climate change and disasters in the Latin American and Caribbean region, the dissemination of the Global Set of Climate Change Statistics and Indicators adopted by the United Nations Statistical Commission, and the Colombia and Peru experiences of indicators and statistics related to climate change and disasters in the region.

For further information kindly click here:
https://www.cepal.org/en/events/webinar-climate-change-statistics-and-indicators-latin-america-and-caribbean

Working group on Environment Statistics. Statistical Conference of the Americas. LAC Region. First semester activities.

This working group is led by the National Institute of Statistics and Census of Costa Rica, with the participation of 14 LA countries and the technical secretariat of the ECLAC, UNEP, and UN Women. The main objective of this working group is to strengthen the official systems of environment statistics in the LAC countries for updated information on the status and governance of environmental, climate change, and disaster statistics, identify countries' experiences on good statistical practices for strengthening environmental, climate change, and disaster statistics development, and recognize opportunities for collaboration to strengthen NSO's' capacities in generating, disseminating, and systematizing environmental statistics.

For further information kindly click here:
https://rtc-cea.cepal.org/en/working-groups

ECLAC Regular Data Collection on Environment Statistics: CEPALSTAT and Statistical Yearbook 2023

ECLAC's environment statistics team is compiling the environment statistics data series to update the CEPALSTAT database with the most recent data. It includes a new environment series to showcase the most relevant issues in the Latin American and Caribbean region. We are developing the third chapter of ECLAC's Statistical Yearbook, which is aimed at environmental information. It shows a selection of tables and graphs that summarize statistical information from the regional perspective.

For further information kindly click here:

https://statistics.cepal.org/portal/cepalstat/index.html?lang=en
https://www.cepal.org/es/taxonomy/term/8140

Planned activities for supporting the development on climate change indicators:

- Technical assistance to Ecuador
- Technical assistance to the Dominican Republic

For further information kindly click here:
https://comunidades.cepal.org/estadisticas-ambientales/es
https://comunidades.cepal.org/estadisticas-ambientales/en

ECA News

Climate Change Statistics in UNECA

(Contributed by the Task Team on Climate Change Statistics, African Centre for Statistics, UNECA)

Climate change is exacerbating existing challenges across Africa, with rising temperatures and unpredictable rainfall leading to more frequent and severe weather events such as droughts, floods, and heatwaves. These disruptions threaten the water-energy-food-ecosystem nexus, critically affecting the livelihoods of communities across the continent. African countries face a significant lack of high-quality data on climate change impacts, which is essential for credible participation in climate negotiations.

As member states prepare their third-generation national climate plans, or Nationally Determined Contributions (NDC) 3.0, achieving carbon-neutral growth in African economies is feasible, particularly with a focus on sustainable agriculture, critical minerals, and the management of biodiversity carbon sinks (blue/green economy). Reliable data is crucial to support these initiatives.

To address the urgent need for improved climate-related data, the African Centre for Statistics at UNECA has established a Task Team on Climate Change Statistics (TTCCS). This intersectoral task team aims to enhance the availability and coverage of climate change statistics for its database users. The group's first achievement was the creation of a climate change-focused data product[12].

Additionally, the TTCCS is engaging with key stakeholders, including other divisions in the UNECA viz. Climate Change, Food Security and Natural Resources Division (CFND) and the Environment Statistics Section (ESS) of UNSD to align priorities and strategies. Future steps involve supporting member states in implementing the Guidelines for the Global Set of Climate Change Statistics and Indicators, as well as building capacity for the adoption of the Climate Change Statistics and Indicators Self-Assessment Tool (CISAT) across Africa.

Disaster-related Statistics

(Contributed by Aster Denekew, African Centre for Statistics, UNECA)

Disasters caused by natural and man-made hazards have a significant impact on societies and economies worldwide. Understanding, monitoring, and responding to these events is crucial for effective disaster risk management and mitigation efforts. Disaster-related statistics play an important role in informing decision-making, formulating policies, and allocating resources for disaster prevention, preparedness, and response. However, there is often a disconnect between the producers of this data, such as statisticians, and the users, including policymakers, researchers, and practitioners. Establishing a platform where producers and users can come together to exchange knowledge, share experiences, and collaborate on improving the quality and accessibility of disaster-related statistics is essential. Developing disaster statistics and risk metrics will support evidence-based policy and decision-making and improve monitoring and reporting of progress towards internationally agreed goals and targets, including the 2030 Agenda for Sustainable Development, Agenda 2063, Sendai Framework for Disaster Risk Reduction, and Paris Agreement on Climate Change.

[12] https://ecastats.uneca.org/data1/data-products/themes/40

Recognizing the importance of disaster-related statistics, the United Nations in collaboration with its partners is organizing every year a global Expert Forum for Producers and Users of Disaster-related Statistics, to advance the production and use of disaster-related statistics for risk-informed development in support of the aim of the Inter-Agency and Expert Group on Disaster-related Statistics (IAEG-DRS) of the United Nations Statistical Commission. The Forum provides a platform where users and producers of disaster-related statistics collaborate and share knowledge.

The fourth Global Expert Forum for Producers and Users of Disaster-related Statistics will be organized in the United Nations Economic Commission for Africa (ECA), Addis Ababa, Ethiopia, from 28 October to 01 November 2024. Previous forums were organized and hosted by the United Nations Economic and Social Commission for Asia and Pacific (2023), the United Nations Economic and Social Commission for Western Asia (2022), and United Nations Economic Commission for Europe (2021).

The Forum is expected to identify challenges and gaps in existing statistical frameworks to improve disaster-related data collection, standardization, and harmonization, and highlight recommendations for improving statistical frameworks and methodologies for disaster-related statistics. It will also promote collaborations and partnerships between producers and users of disaster-related statistics for evidence-based decision-making.

UNECE News

(Contributed by Michael Nagy, Malgorzata Cwiek and Jonathan Gessendorfer, UNECE)

Past events and ongoing activities

9th Joint OECD/UNECE Seminar on the Implementation of the System of Environmental-Economic Accounting (18-20 March 2024, Geneva, Switzerland)

The Ninth Joint OECD/UNECE Seminar on the Implementation of SEEA was organised as an in-person meeting at the Palais des Nations in Geneva, Switzerland on 18-20 March 2024.

The 9th Seminar had a focus on **producing and using SEEA Accounts for informing circular economy and climate-change-related risk reduction policies**.

More than 90 experts from 36 countries (Armenia, Australia (online as presenter), Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Canada, Costa Rica, Croatia, Estonia, Finland, France, Georgia, Germany (online as presenter), Hungary, Ireland, Italy, Kazakhstan, Kyrgyzstan, Lithuania, Luxembourg, Malta, Mexico, the Netherlands, North Macedonia, Norway, Poland, the Republic of Moldova, Romania, the Russian Federation, Sweden, Tajikistan, Ukraine, the United Kingdom of Great Britain and Northern Ireland, the United States of America and Uzbekistan), international organisations, academia and NGOs participated in the meeting.

The meeting report, presentations, background documents and video recordings of the meeting are available at https://unece.org/info/events/event/383686

Sectorial review on environment statistics in Georgia

A sectorial review on environment statistics of the Georgian National Statistical System was carried out jointly with Statistics Luxembourg, the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan ESCAP and UNEP from 30 April – 2 May 2024.

The main objectives of the review were to draft recommendations for a gradual strengthening of the national statistical capacity to produce environment statistics and environmental-economic accounts for informing national policies and to fulfil the requirements set by the European Commission in the context of the EU accession process.

The review was based on a self-assessment tool and targeted meetings with experts from the National Statistical Office, the Ministry of Agriculture and Environment and other governmental stakeholders, as well as from academia, NGOs, media and international organisations based in Georgia. A report is currently being drafted.

A sectorial review on environmental statistics of the National Statistical System of the Republic of Kazakhstan will be organised in the second half of 2024.

Conference of European Statisticians endorsed a report on the role of national statistical offices in climate change statistics

In June 2024 the Conference of European Statisticians endorsed a report on the role of national statistical offices (NSOs) in climate change statistics. The document provides practical guidance on how the work of NSOs contributes to informing climate action. It analyses concrete ways in which NSOs can contribute and showcases what the statistical system already offers, focusing in particular on the role of NSOs in:

- Reporting under the Paris Agreement
- Meeting information needs of national policymaking in terms of climate mitigation, adaptation, just transition and climate finance
- Informing the public about climate-related issues.

The guidance was prepared between February 2022 and January 2024 by a dedicated UNECE Task Force chaired by Statistics Netherlands. The version presented to CES is available on the UNECE website. Minor amendments as agreed with CES are needed before publication.

Upcoming Events

2024 Expert Forum for Producers and Users of Climate Change-Related Statistics (29-30 August 2024, Geneva)

The 12th UNECE Expert Forum for Producers and Users of Climate Change-Related Statistics is planned to be held on 29-30 August 2024 in Geneva, Switzerland. The main objective of the annual Expert Fora is to provide a platform for sharing experiences, discussing concepts and measurement issues, and identifying areas for practical guidance.

The 2024 Expert Forum for Producers and Users of Climate Change-Related Statistics aims to:

- Facilitate the sharing of knowledge and experience in developing new climate change-related statistics and improving the usefulness of the existing data;
- Provide a platform for dialogue between producers and users of climate change-related statistics, e.g., on the strengthening of underlying data and on the role and responsibilities of the statistical community in this domain;
- Support implementation of the CES Guidance on the role of national statistical offices in achieving national climate objectives (endorsed by CES in June 2024) and the CES Set of Core Climate Change-related Indicators and Statistics Using the System of Environmental-Economic Accounting (2020);
- Show good practices and enable peer-to-peer learning in producing, disseminating and using climate change-related statistics;
- Identify areas of climate change-related statistics that require further methodological work or where practical guidance would need to be developed.

More information and the registration link are available on the event web page https://unece.org/statistics/events/EFCCRS2024.

Meeting of the Joint Task Force on Environmental Statistics and Indicators (17-18 October 2024, Geneva, Switzerland)

The 21st session of the UNECE Joint Task Force on Environmental Statistics and Indicators (JTFESI) will be held from 17-18 October 2024 in Geneva, Switzerland.

JTFESI assists the countries of Eastern and South-Eastern Europe, the Caucasus and Central Asia in their efforts to:

a) Apply the Shared Environmental Information System principles and methodologies for the United Nations Economic Commission for Europe (ECE) core environmental indicators and data production in line with international statistical standards;
b) Analyse and communicate environmental data;
c) Develop capacity to implement the System of Environmental-Economic Accounting;
d) Develop capacity for the compilation and integration of environmental data in support of measuring progress in the context of sustainable development and green economy initiatives.

It is a unique body that brings regularly together experts from National Statistical Offices with Ministries of Environment (or Environment Agencies) to exchange knowledge and experience on the above issues. It is open to environmental experts and statisticians from all ECE member States.

The upcoming meeting will discuss, amongst other issues, developments related to the "Guidelines for the Application of Environmental Indicators – 2023 Edition"; data needs, statistics and indicators to manage environment-related human health issues, progress made by countries in the implementation of SEIS (Shared Environmental Information System) and the Guidelines; and capacity development needs.

The registration link, agenda and other meeting documents will be made available at the meeting webpage https://unece.org/info/events/event/392462.

Recent Eurostat activities

(Contributed by Christine Mayer, Eurostat)

An overview of Eurostat activities on environmental statistics, environmental accounts and sustainable development indicators can be found at: http://ec.europa.eu/eurostat/web/environment/overview. The following is a summary of developments in the last six months.

Sustainable Development Goals (SDGs) and other policy monitoring frameworks

Eurostat has a dedicated website for SDG indicators. The latest Eurostat SDG communication package was published on 18 June 2024, including the full monitoring report on progress towards the SDGs in an EU context – 2024 edition, overview brochure, the digital publication 'SDGs & me' and visualisation tools to compare countries. The 2024 report looks at the impact of some recent developments on the SDGs based on quarterly and monthly data. In addition, it includes a section on the EU in the world and analyses spillover effects of EU consumption. The SDGs are also included in the macro-economic package 'European Semester', which reinforces the SDGs mainstreaming into the EU economic policymaking.

Environmental statistics

The main entry points for Eurostat environmental statistics are the dedicated sections in its website for environment, waste statistics and climate change related statistics.

The results of the data collection on inland waters, including regional information, are published in this

online article (data for 2021). An overview of data published on forestry and forests by Eurostat can be found in this link and the data are available here (data for 2021).

The results of the OECD/Eurostat Joint Questionnaire on municipal waste are published in this online article. The data collections on waste streams (packaging waste, waste electric and electronic equipment, end of life vehicles and batteries) were completed in September-October 2023 and the data are published here. Also updated were the online articles on electrical and electronic equipment, waste packaging and batteries. The results of the 2022 data collection on waste statistics according to Regulation (EC) 2150/2002 are published here (data for 2020) and in the online articles here and here.

SEEA environmental accounts

Eurostat runs data collections of SEEA-based environmental accounts, and the results are published as follows: air emission accounts, material flow accounts, environmental taxes and subsidies, environmental sector, environmental protection expenditure and physical energy flow accounts. All these data collections are annual and mandatory for EU Member States.

In addition, Eurostat produces quarterly estimates of greenhouse gases based on SEEA, and with a timeliness of 4 ½ months. Eurostat also publishes air emission footprints and two datasets with material footprints (aggregate and detailed).

Beginning of 2024, the Council and the Parliament have agreed to introduce three new modules: forest accounts, environmental subsidies and similar transfers accounts and ecosystem accounts. Data collections will start in 2025 and 2026 (for ecosystem accounts). Moreover, Eurostat will collect data on investments in climate change as of 2024.

Eurostat will also prepare feasibility studies regarding energy subsidies, including fossil fuel subsidies, monetary valuation of ecosystem services, climate change adaptation and water accounts.

Eurostat facilitates training courses on environmental statistics and SEEA for European compilers. Those courses are free of charge and also open to participants from outside the European Union, provided free places are available. Material from past courses is available here. In June, Eurostat organised online workshops where European countries presented results of pilot projects on environmental statistical and accounts co-financed with Eurostat grants.

Pacific regional update from the Pacific Community

(Contributed by Alison Culpin and Lisa Green, SPC)

SPC, in collaboration with SIAP, (United Nations Statistical Institute for Asia and the Pacific) delivered two sub-regional Climate Change Statistics Workshops in June, one in Vanuatu for South Pacific SIDS and one in Guam for Northern Pacific SIDS.

Topics covered included; climate change statistics production and needs in Pacific countries, topics in the Natural Disaster and Climate Change Household Survey, introduction to SEEA, land and water accounts, ecosystem accounts and carbon sequestration calculations, air emission accounts, and good practices in dissemination.

National activities

Nauru and the Federated States of Micronesia are planning to establish an environmental statistics unit in their respective National Statistics Offices, signalling the increased interest in servicing national needs for environmental monitoring.

Photo: Workshop participants, Port Vila, June 2024

Preliminary results from the 2023 Kiribati Household Income and Expenditure Survey show that more than one-in-ten households surveyed were impacted by a natural disaster in the previous 12 months. Strong wind and heavy rains are the climate events that most impacted dwellings, while drought and extreme temperature mainly impacted household agricultural assets.

The Cook Islands have completed the fieldwork on their Labour Force and Climate Change Survey, and an analytical report will be available later this year.

ESCAP News

(Contributed by Statistics Division, ESCAP)

The Maldives' roadmap for environmental-economic statistics

The Maldives has since 2017 embarked on an effort to improve environment statistics in accordance with the System of Environmental-Economic Accounting (SEEA). This included the pilot implementation of accounts for water, solid waste and land following the SEEA Central Framework, as well as the natural capital accounts in Laamu Atoll. To further strengthen the country's overall sustainable development policies and the data need thereof, the Maldives Bureau of Statistics (MBS) in collaboration with key government agencies and institutes, with support from ESCAP, established a roadmap for environmental-economic statistics (https://statisticsmaldives.gov.mv/environmental-roadmap-2024/). The roadmap identified four short-term priorities/five SEEA accounts for immediate implementation by 2024-2025, as well as five medium-to-long term priorities/eight accounts to be accomplished by 2030. It also identified the institutional mechanisms, roles and responsibilities of national stakeholders in the compilation and use of statistics derived from the priority accounts. The roadmap was endorsed and signed by the Minister of Climate Change, Environment and Energy and the Minister of Tourism, as well as the Minister of Housing, Land and Urban Development and MBS on 5 June 2024 in conjunction with the country's celebration of the World Environment Day.

A brief on Environmental Statistics/Accounts in Bangladesh: Current and Future Endeavour by Bangladesh Bureau of Statistics

(Contributed by Mohammad Saddam Hossain Khan, Deputy Director and Project Director of Environment, Climate Change and Disaster Statistics Strengthening (ECDS) Project, BBS)

Introduction:

Bangladesh is one of the world's most disaster and climate vulnerable countries, at the same time most resilient countries, due to the frequent, regular, and devastating disasters. Bangladesh is one of the Signatory of the SDGs, the Paris Agreement & the Sendai Framework for Disaster Risk and Reduction (SFDRR). This is time to paradigm shift towards climate resilient development pathways and sustainable development. So, protecting the environment is the key to ensure the sustainable development and overall green growth of the Nation. The Bangladesh Bureau of Statistics (BBS) is responsible for generating, compiling and disseminating the official statistics of our country. Considering the types of statistics, socio-economic, demographic, health as well as environmental statistics are vital to locate the data gaps towards to SDG's achievement in particular.

National Policies and involvement of Development Partners (DP's):

Considering the predetermined issues through the national aspects related for strengthening environment namely, The Mujib Climate Prosperity Plan Decade 2030 is built on the foundation of the major national Plans e.g., 8FYP, Perspective Plan 2041, Delta Plan 2100, Bangladesh Climate Change Strategy and Action Plan (BCCSAP), National Adaptation Plan (NAP), Nationally Determined Contribution (NDC), Climate Change Gender Action Plan (CCGAP) and SDGs by 2030. Building forward stronger by charting a decade of robust socio-economic development that fully integrates climate resilience and low carbon economic growth for optimized prosperity and partnership. In the 8th Five Year Plan Government is committed to generate Green Accounting (Natural Resource Accounts) e.g., Physical Statistics, Natural Resource Accounts & their changes over time by BBS.

Apart from these the Bangladesh Government has prepared and endorsed the Bangladesh Environmental Statistics Framework (BESF) 2016-2030 align with required National, Regional and International Strategies and Protocols e.g., SDGs, Parish Agreement, SFDRR, DRSF, UNSEEA, UNFDES, SNA and other frameworks. BESF consists of six components that comply with the UNFDES and also makes links to the SDGs. As per followed by the BESF 2016-30 based on national needs and priorities, Bangladesh Bureau of Statistics is implementing the Strengthening Environment, Climate Change and Disaster Statistics (ECDS) Project 2019-2025 timeline under Bangladesh Bureau of Statistics. This Project has operationalized the relevant activities for generating the environmental statistics/accounts for our country according to the System of Environmental Economic Accounting (SEEA).

Implemented Initiatives regarding Environmental Statistics:

BBS already completed some of its Surveys in particular generating the environmental statistics [13]Bangladesh Disaster-related Statistics 2021: Climate Change and Natural Disaster Perspectives in June 2022. BBS also conducted [14]Municipal Waste Management (MWM) Survey 2022: City Corporations and Paurashavas for the first time in Bangladesh and report published in 2023. Conducted the [15]Environmental Protection Expenditure, Resource and Waste Management (EPER&WM) Survey 2022 which published in 2023. Apart from these, BBS published the Report on

13 http://203.112.218.65:8008/WebTestApplication/userfiles/Image/latesreport/2_BDRS_2021Final.pdf

14 http://203.112.218.101/storage/files/1/Municipal%20Waste%20Management%20(MWM)%20Survey%202022%20as%20on%2005-11-2023.pdf

15 http://203.112.218.101/storage/files/1/EPER&WM_2022_Full%20Book-11.12.2023%20(1).pdf

[16]Integration of Geospatial Data with Socio-economic, Demographic and Environmental data: Web GIS Application by using secondary data source. In recent BBS published Report on [17]Survey on Research and Development (R&D)-2022 published in 2024. These mentioned surveys are implemented through the ECDS project in BBS. Under this project for the first time BBS has conducted the Household Based Environmental Survey 2024 and data collection of this survey completed and we are analysing data for preparing the report. BBS has conducted different capacity building training workshops and seminars with the various stakeholders to enhance the skills to understand the environment statistics and its uses.

BBS has also contributed to the Global Set of Climate Change Statistics and Indicators and has data available for some of the indicators and statistics. BBS is also applying and using the Climate Change Statistics and Indicators Self-Assessment Tool (CISAT) and the Implementation Guidelines as part of its endeavour to implement the Global Set in Bangladesh.

BBS is recently working for preparing the Natural Resource Accounts in line with SEEA particularly Land, Forest and Ecosystem and Water Accounts. These will be the baseline accounts and will create the opportunity for further development in continuous interval. Also, the Material Footprint and Domestic material consumption related report will be generated by BBS under ECDS project. Apart from these we have started for Compiling the Environmental Statistics 2024 by using secondary sources data.

Planning to develop the new activities focusing on Environmental Statistics through Environment, Climate Change and Disaster Statistics (ECDS) Cell, BBS in priority basis:

a) Air Emission Accounts
b) Energy Accounts
c) GHG Inventories
d) Fisheries Accounts
e) Disaster Risk Reduction Expenditure Accounts
f) Poverty (Development) Environment Accounts (PEA)
g) Ocean Accounts (Blue Economy)
h) Green Growth Indicators of Bangladesh
i) Climate Vulnerability Assessment (CVA) and Climate Vulnerability Index (CVI)

Conclusion:

Government of Bangladesh has been concerned about continuous conversion of agriculture, forest and wetland into other uses and has been working actively to protect agricultural land, and wetland. The commitments and the international obligations of the government of Bangladesh towards SDGs, BBS has been working to undertake the initiatives for accelerating the generation of environmental statistics by giving priority in particular. The future endeavour will be essential to keep the good phase of development in this sector. Environmental Statistics allow the policy planners to formulate policies to mitigate the risk of climate challenges as well as adaptations. The collaboration of the different ministries, government organizations and non-government organizations and development partners are indeed necessary to accelerating their efforts to make the nation as climate justice and equity.

16 http://203.112.218.65:8008/WebTestApplication/userfiles/Image/latesreport/1_FinalPublicationGISWebApplication2023.pdf

17 http://nsds.bbs.gov.bd/storage/files/1/R_&_D_Report_Full%20Book-26.05.2024.pdf

Canada's Census of Environment

(Contributed by Statistics Canada)

In 2021, the Government of Canada awarded Statistics Canada (StatCan) with funding to develop the Census of Environment (CoE), which links data on ecosystems with socio-economic information to analyze the connections between ecosystems, the economy and human well-being. The new programme is conducted in partnership with Environment and Climate Change Canada, and in collaboration with several key federal departments.

The CoE expands upon StatCan's ongoing environmental accounts and statistics programme based upon the UN SEEA. It allows for the development of consistent and ongoing data on ecosystem assets, following the UN SEEA EA framework.

In the first three years of the programme, StatCan has worked on setting out the path for the CoE as well as researching, integrating, and producing data. The vision for this project involves providing comprehensive information on Canada's ecosystems, to understand their extent, condition and the values and benefits of nature to society.

To achieve this goal, significant efforts have been expended to develop infrastructure to support data and accounts development. This includes work on parameters for a grid system for the ecosystem register and determining how best to store and process ecosystem data. The CoE is engaged in creating a suite of land, water, and ecosystem accounts, integrating the bio-physical environmental data with the vast array of socio-economic information available in StatCan and elsewhere. A focus of this work includes data integration to delineate ecosystem assets.

Products released to date include ocean and coastal accounts, with data available on ecosystem extent, protected areas and salt marsh condition and services. In addition, the team has produced data for the agroecosystem extent and condition accounts and urban extent and condition accounts. Progress has also been made on socio-economic linkages with releases on resource-based communities, coastal populations and population by ecological geographies. Data on ecosystem provisioning services and updates to the historic water resources time series round out the program's recent releases.

A key deliverable for the CoE was the creation of a portal to disseminate the programme's data products and tools. This portal was released in Spring 2024 and offers users easy access to the data and resources that the CoE produces. It also includes the CoE Geospatial Explorer that allows users to view recent CoE data as a thematic map. This portal will be regularly updated as the program develops, and as new products are released.

Biodiversity data is in demand for policy makers and the CoE will provide data for broader policy initiatives such as the Sustainable Development Goals indicators and the Kunming-Montreal Global Biodiversity Framework (GBF). For example, the CoE is responsible for developing data to support three headline indicators under the GBF (extent of natural ecosystems (A2), ecosystem services (B1), and public access to urban green and blue spaces (12.1)).

Environmental and Climate Change Statistics in the Dominican Republic

(Contributed by the Department of Environmental Statistics, National Statistics Office)

As a Small Island Developing State (SIDS), the Dominican Republic is highly vulnerable to the impacts of climate change (WB, 2018). Moreover, it ranks among the most exposed countries to disasters. Its geographical location and characteristics amplify this vulnerability, resulting in a high incidence of climate-

sensitive diseases. Countries at higher risk, such as this island nation, possess fewer resources and protections against threats, exacerbating the occurrence of climate events and pollution.

For decades, there has been a recognized need to efficiently and rationally manage environmental resources to enhance the current population's well-being without compromising the quality of life for future generations, and to reverse environmental degradation caused by unsustainable production and consumption patterns. Therefore, the demand for environmental and climate change statistical information aligns with national planning instruments, primarily the National Development Strategy (END), and includes the Multi-annual National Public Sector Plan, which concretely articulates public policies, plans, programs, and projects to be implemented during the governmental mandate.

Despite the challenges, the National Statistics Office (ONE) has identified opportunities to explore new alternatives, implement innovative strategies, and utilize non-traditional methods through its environmental statistics department. Progress has been made in producing environmental and climate change statistics, with a mission to support and assist institutions in improving the quality of environmental statistical production. This aligns with the country's vision of "a society with a culture of sustainable production and consumption, managing risks equitably and effectively, protecting the environment and natural resources, and promoting adequate adaptation to climate change" (Axis 4 END).

It is noteworthy that ONE is not alone in these efforts; other institutions have also been generating activity data contributing to the environmental sector, complying with international agreements and conventions. In this regard, the Framework for the Development of Environment Statistics (FDES) has been adapted to meet environmental statistics requirements. Additionally, active participation in the CEA-CEPAL working group and various resulting seminars, as well as international events on the use of Big Data for official and experimental statistics, has been undertaken.

In terms of data production and exchange, various projects, initiatives, and programs have been developed to overcome information access limitations. A notable example is the utilization of administrative records with support from the United Nations through the Development Account DA13 project for disaggregating SDG indicators. This project enabled the assessment of administrative data quality and the production of official statistics related to disaster risks.

The importance of developing and applying environmental and climate change statistics for monitoring and tracking Sustainable Development Goal (SDG) indicators is unquestionable, especially considering the development of these statistics in Latin American and Caribbean countries. Despite emerging challenges, progress has been made in the production and dissemination of environmental and climate change statistics. Currently, databases are available to users on solid waste, atmosphere, and climate. Additionally, eight bulletins addressing various environmental and climate change phenomena have been published, along with innovative infographics on drinking water, sanitation, and environmental quality, offering a concise and dynamic perspective on these variables.

Environmental Statistics and Climate Change Related Statistics in Italy

(Contributed by Giovanna Tagliacozzo, Istat)

As official statistics follows the transformations of society and the planet, the Institute of Statistics in Italy has always kept up with the pace of economic, social and environmental transformations over the years. In the last decades new challenge have led to the need to integrate all dimensions under the umbrella concept of Sustainable Development, avoiding the division into information *silos*. The multiple crisis related to climate change, pollution and biodiversity loss, in fact required considering all the resulting economic and social aspects as a whole. Istat has always contributed to the related international initiatives where the scope and role of National Statistical System, of which Istat is coordinator, are discussed. Istat has responded promptly

to the task of disseminating statistics for monitoring the 2030 Agenda and its 17 Goals, by coordinating different sources in the economic, social and environmental spheres.

Today's great challenge lies in the interconnections between dimensions, which are essential for achieving a just ecological transition. Social inequalities of the population intersect with environmental aspects; risks from climate change and environmental degradation affect the most vulnerable groups the most. Reliable and comparable statistical information, coordination, dissemination, must follow the needs arising from these new challenges, linking the different statistical communities.

In recent years, Istat has produced and focused on products that could meet this needs, being involved in several multidisciplinary and inter-institutional groups, nationally and internationally and investing in strengthening existing processes that could fit better improving their effective application in a multiple perspective and new processes exploring new data sources, from registers to satellite data or big data that can massively improve relevant statistical production or implementing new geographies and spatial information, geo-referencing statistical data. All areas in which the institute is strongly engaged that could increase the analyses related to Environment, Climate Change Adaptation and Disaster Risk. The integration of Statistical Registers, administrative data and statistics from surveys can increase its contributions, as well, with innovative elements. Additionally, Istat is involved in international groups where the use of how Censuses and Household Surveys can reach relevant information is analysed. Recently Istat has also been an active member of the Subgroup on Climate Change Questions under the UNSD Expert Group on Environment and Climate Change Statistics (EG-ECCS) where it has been deeply engaged in a mapping exercise to source questions from Censuses and Surveys for data collection at the national level to inform the Global Set of Climate Change Statistics and Indicators.

In addition to its active participation in the UNECE Task Forces on Climate Change Statistics since 2011 and on Disaster Statistics since 2014, as well as in the EG-ECCS, Istat is committed in the implementation of the related core sets of indicators derived from them, following guidelines, sharing and exporting experiences. Istat has a long history in environmental statistics with the Urban Environmental Data Survey since 2000, the Urban Water Census since 1999, the Meteoclimatic and Hydrological Data Survey since 1971, the Household Energy Consumption Survey since 2013 and a long history in Environmental Accounting, since 1990. It is important to mention how other surveys traditionally off the radar of climate change and disaster risk analysis have considered to be relevant, e.g., the EU Statistics on Income and Living Conditions (EU-SILC) and other statistical domains, tourism, transports, health, poverty, etc.

Currently, Istat is analyzing Agricultural Censuses as a source of Climate Change information and is planning a Multipurpose survey on Agriculture with questions on the effects of Climate Change on farms' activities and production. Also, Istat recently published an update of the work on Citizens' attitudes and behaviors in environmental matters from the annual household multipurpose survey on Aspects of Daily Life, documenting how the concern on Climate Change and Environment is increasing in the population, with differences between age and gender. As group characteristics are important - vulnerabilities, sensitivity and affects vary differently - a gender based approach is generally recommended and adopted where possible along the Istat's statistical production.

Istat. 2022 SDGS REPORT. STATISTICAL INFORMATION FOR 2030 AGENDA IN ITALY
https://www.istat.it/en/archivio/284043

Istat. ENVIRONMENT AND ENERGY
https://www.istat.it/en/environment-and-energy?analysis-and-product

Istat, 7TH GENERAL CENSUS OF AGRICULTURE
https://www.istat.it/en/censuses/agriculture/7th-general-census

National Climate Change Survey 2022, Nepal

(Contributed by Pramod Raj Regmi, Director and Hem Raj Regmi, Deputy Chief Statistician, National Statistics Office, Nepal)

A new Statistics Act, 2022 has been promulgated on the 13th of September 2022 replacing the Statistics Act, 1959. The Act has upgraded the former Central Bureau of Statistics (CBS) as the National Statistics Office. Currently, the office is under the office of the Prime Minister and Council of Ministers. In the past, the Central Bureau of Statistics was headed by the Director General, while the National Statistics Office is currently headed by the Chief Statistician (Secretary). The role of this office is always crucial for the effective functioning of the national statistical system as a whole. The National Statistics Office is committed to develop and strengthen the statistical system of Nepal promoting collaborative efforts and good relationship among the data providers, producers and general users.

It regularly produces the data on demography via population and housing census, economic data via compiling national accounts and other social and environmental data via different census and surveys for the benefit of its users who are the three tiers of government, civil society academia and private sector.

As a households-based survey, Nepal has conducted the National Climate Change Survey (NCCS) for the second time in 2022. The objectives of the survey were to (a) provide valuable insights into the awareness, perception, attitude, and behaviour of the households in relation to climate change (b) assess the climate change impact on various thematic sectors and (c) present the current adaptation measures at household level. Around 6500 households were interviewed across Nepal. Only households meeting the criteria of having a respondent aged 45 or older and residing in the same locality for at least 25 years were considered eligible for the interview. The thematic coverage of the survey includes demographics, agriculture, water resources, energy, forest, biodiversity, disaster, etc. The survey report was released on 13th May 2024. Based on its experiences with the NCCS, the National Statistics Office has collaborated with the United Nations Statistics Division to provide inputs on the Global Set of Climate Change Statistics and Indicators.

The report consists of nine chapters. Chapter one focuses on introduction of the climate change and major components considered in the survey and chapter two focuses on methodological framework used in the survey. Chapter three presents a comprehensive view of household demographics and socio-economic aspects. It highlights variations in education levels, household sizes, and marital status across different domains. Chapter four describes the knowledge, and perception related to climate change and its factors. Chapter five to seven provides a comprehensive insight into the effects of climate-induced disasters on households, particularly on livelihood, water resources and biodiversity. Chapter nine describes the adaptation strategies practiced by households.

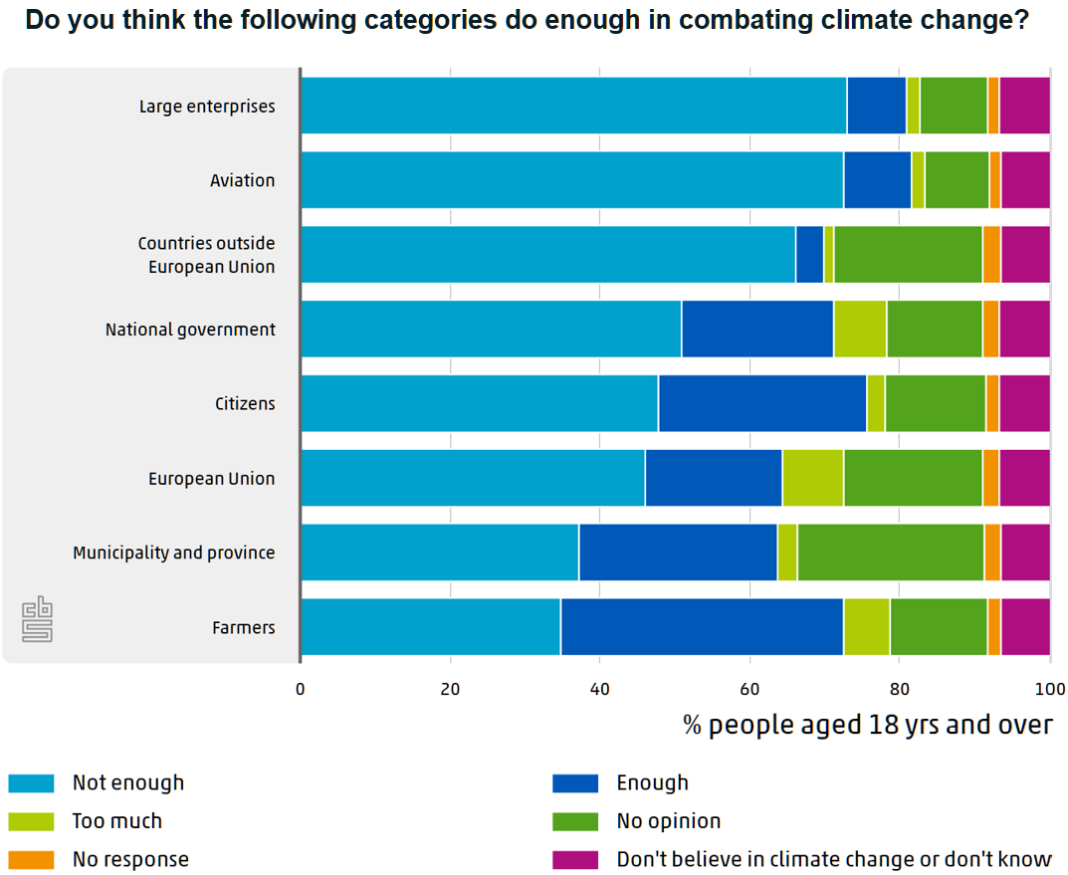
According to the survey, a mere 35.8% of households in Nepal are aware about climate change where such percentage is 25.9 for female and 38.7 for male. The report shows that 33.4% received climate change related information via radio while 29.6% from television. The survey finds that 65.4% of the respondents recognized drought as the major climate induced disaster while 54.3% and 32.6% identified disease/pest outbreaks and increase in floods respectively, as other disasters. Additionally, the survey indicates that 28.5% of respondents have encountered storm surges, while 21.7% have experienced landslides. The survey also shows that nearly 54% households experienced occurrences of new diseases in crop over the last 25 years. Climate change has significantly impacted water sources, as the percentage of households reporting drying up water from rivers, hand pumps, and other spring sources were found to be 43.1%, 14%, and 38.2% respectively. The economic loss due to climate induced disasters was estimated at around 629 million US dollars annually in the last five years. The survey also reveals that the major farm-based activities undertaken by the households to combat the impact of climate change were increase in use of chemical fertiliser (49.3%), use of improved seeds (47.2%), and controlling invasive alien species (40.7%) whereas the off-farm activities were starting off-farm business (41.1%), change in food consumption habits (33.7%) and temporary internal migration (28.4%).

The report is available at https://api.giwms.gov.np/storage/36/posts/1715605547_98.pdf

Do people worry about impacts of climate change?

(Contributed by Arthur Denneman, Statistics Netherlands)

Yes they do! Three quarters of Dutch adults are concerned about the impacts of climate change (news release; November 2023). Their concerns are temperature-related (summer drought), water-related (floods) and about the extinction of animal and plant species. The Dutch think that farmers do more to combat climate change than large companies and aviation (see figure). In the Netherlands, young people lead a less climate-conscious lifestyle than older people. For instance, an above average percentage of young people traveled by plane last year (News release; March 2024).



Such findings are based on the annual Perceptions Survey, which focused on climate change and energy transition in 2020 and 2023. It included questions not only about climate concerns, but also about perceived drivers and obstacles in areas such as sustainable housing (solar panels, heat pumps, and insulation), sustainable mobility (electric cars), and sustainable eating habits. An English version of the 2023 survey questions is available upon request. The topics of the upcoming Dutch Perception Surveys are Inequality of Opportunity (2024) and Artificial Intelligence and Migration (2025). For more information, please, contact our statisticians Rianne Kloosterman (jg.kloosterman@cbs.nl) and Eveline Vandewal ejm.vandewal@cbs.nl).

Environment Statistics at the UK Office for National Statistics

(Contributed by Alexandra Christenson, Neil Wilson, Bonang Lewis, Myer Glickman and Vijendra Ingole)

Our latest public opinions and social trends data for Great Britain showed that people thought that climate change and the environment was the sixth most commonly reported issue facing the UK today. The UK Office for National Statistics has a long history of producing environmental statistics as part of our mission in delivering Statistics for the Public Good. Our data informs the UK, whether enquiring citizens, policymakers or expert users, to improve understanding and enable better decision making.

Our long running surveys, emissions estimates, and wider environmental and natural capital accounts allow us to present a wide range of evidence on this subject. We continue to explore new ways of developing and presenting data on the environment and green economy to inform and respond to user needs, such as through our innovative estimates of quarterly greenhouse gas emissions.

Additionally, we are collaborating with the Economic Statistics Centre of Excellence (ESCoE) on developing an Environmental Footprint measurement for the UK and exploring how we can measure the green economy using our existing Environmental Accounts.

Internationally, we are looking to build on the work of the World Bank on Natural Capital Accounts in Ghana by developing cultural service estimates. We are also in discissions with the ecosystem services team in Kenya to consider support.

Lastly, as explained in the 54th Issue of the ENVSTATS News and Notes (p39-40), our 4-year Wellcome Trust funded project aims to address this gap by developing unified standards for reporting official statistics on climate-health interactions across the globe. We are also developing an online platform to share climate-health indicators and methodologies in collaboration with the United Nations Global Platform.

The project has completed its second year, and we are on track to deliver the alpha version of the framework setting out the recommended indicator measures and methods. Each climate-health topic will include a topic summary, methods, metadata and reproducible code, developed with advice from global experts. These topics are far-reaching, spanning hazards such as extreme weather events, chemical contaminants, mental health, and health care systems. As we enter our beta-phase in August 2024 we aim to begin partner- and user-testing the framework and knowledge-sharing platform. The aim of this testing is to quality assure the methods, test usefulness to users, and ensure the wider generalisability of the indicators.

Over the next two years we aim to finalise our framework and fully launch our data platform. It is hoped that these unified standards will serve as the basis for future climate-health studies as the impacts of climate change become increasingly apparent and important through the 21st century.

Recent ONS publications:

Greenhouse gas emissions and trade
Environmental Accounts 2024
Impact of hot days on productivity in Great Britain methodology
Measuring UK greenhouse gas emissions
Quarterly greenhouse gas emissions

FORTHCOMING EVENTS

- 11th session of the Expert Group on Environment and Climate Change Statistics (EG-ECCS) 14-17 October 2024)
  (information to be posted here: https://unstats.un.org/unsd/envstats/fdes/fdes_eges.cshtml)

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